

In This Issue...

COVER FOCUS

Key Trends For The Year Ahead

What technologies and trends will shape 2011 in terms of power management, security, and more? We talked with some industry experts to find out.

Trends In Power Management .....10  
Cloud Computing Trends To Watch .....12  
The Latest Security Developments .....13  
Data Center Layout & Design Trends .....14

Improving Your Storage

Is storage a major pain point at your enterprise? We compiled tips and advice to improve your storage setup and strategies in four key areas. See page 26.

PHYSICAL INFRASTRUCTURE

■ Although human error is the No. 1 cause of data center downtime, you can't ignore natural disasters. **Where your data center is located** dictates the types of disasters your enterprise could face. A new Uptime Institute standard emphasizes evaluating the potential risks of a site ..... page 16

■ **Buying Guide:**  
Fire Protection..... page 17

■ **Product Spotlight:**  
Fire Protection..... page 18

■ **Product Spotlight:**  
Power Distribution Units ..... page 20

■ Many data center managers are looking to **alternative energy sources** for their data center's power needs. Here are some pros and cons to keep in mind when considering alternative energy options ..... page 22

■ Lowering your **data center's carbon footprint** will not only have a positive effect on the environment but also on your company's budgets. We outline some suggestions here..... page 23

■ Firelock builds and installs modular vaults that **protect media and equipment** from fire, earthquakes, and other disasters while maintaining the correct conditions of humidity and temperature..... page 24

NETWORKING & VPN

■ Changing security architectures to accommodate mobile employee and external business partners is an incremental process—here's how to start ..... page 30

■ Tasked with finding a **desktop management solution** for its integrated workforce, Lutheran Social Services turned to RES Software's Work-space Manager..... page 31

SECURITY

■ Although the average computer user can be (and some likely have been) infected with the **Zeus Trojan**, it is much more dangerous when it hits an enterprise system. Here's what you need to know to protect your enterprise ..... page 32

The Processor.com home page is frequently updated with new articles and hardware news to help you keep current. Visit [www.processor.com](http://www.processor.com) today.

# New Technologies, New Storage Challenges

Virtualization & Cloud Computing Make Backups, Verification More Important Than Ever

by Kris Glaser Brambila

COUNTLESS BUSINESSES HAVE explored cloud computing and virtualization solutions with the hope of being able to save money and the environment by combining multiple environments and applications, lessening the number of physical machines and the electricity needed to run them, and reducing overall hardware costs.

But it's no secret that the technologies come with their own sets of risks that all businesses need to acknowledge and consider, especially when it comes to storage. According to a Symantec study of 1,700 enterprise employees, 60% of virtualized servers aren't included in disaster recovery plans, and 44% of the data stored on virtualized systems isn't regularly backed up.

DataRecovery.com (formerly ESS Data Recovery; [www.datarecovery.com](http://www.datarecovery.com)) knows about the storage-related vulnerabilities surrounding cloud computing and virtualization. The company specializes in professional data recovery and can tackle large RAID arrays, data tapes, flash media, and any desktop or laptop hard drive. Over the years, DataRecovery.com has recovered data for major organizations such as NASA, Sprint, and Microsoft.

"Our primary service is internal hard disk drive recovery," says Ben Carmitchel, DataRecovery.com's president and CEO. "Many of the RAID recovery labs around the world use us to do the 'internals.' In other words, our guys know hard drives inside and out and can recover data from catastrophic drive failure more than 90% of the time," he says.

Major Data Recovery

DataRecovery.com has even come to the rescue of the U.S. military.

It started when an IT department within the U.S. military inherited 26 servers that sported a SAN environment and were mirrored to an identical SAN device. The IT department felt that this was a vulnerable setup, so it decided to convert the existing equipment to a load-distributed setup and incorporate a safer virtualization backup system. Before starting, however, the backup SAN needed to be formatted and upgraded with additional capacity.

One of the department's workers started the format process, and upon returning later to check its progress, realized that the format



had never initialized. He started it again. Shortly thereafter, the IT department's help desk was flooded with calls about inaccessible email. IT staffers presumed that the database had gone down. But the issue was much more severe: The SANs' IP addresses were nearly identical, and the passwords the same, so when the IT worker restarted the formatting process, the second SAN was actually being formatted, too.

All 26 servers were down, leaving workers unable to do their jobs—a huge issue for a major military data center.

Verification Is Key

When it comes to virtualization, Carmitchel says, verification is key. "The largest vulnerability is when the backup is not verified before implementing a change," he says.

Luckily for the U.S. military customer, DataRecovery.com was ready to help. After instructing the IT department to physically unplug the SANs, DataRecovery.com made plans to go onsite to help repair the problem, while programmers remained on call to work on the problem remotely. Within 24 hours, DataRecovery.com was able to recover all 26 servers and 100% of the data.

"ESS is one of only three companies in the U.S. with a government GSA contract," Carmitchel says. "We help government IT departments in the exact same

way we help SMEs; if it's lost, we get it back."

Although DataRecovery.com can come onsite if needed, it's rarely necessary. "Most SAN recoveries are done remotely if there is no hardware failure," Carmitchel says.

"We can SSH right into an ESX server and recover an accidentally deleted VM, for instance." If there is hardware failure, Carmitchel says, customers send their drives to one of four labs in California, Illinois, Minnesota, or Ontario, Canada. After a DataRecovery.com expert has recovered the data, it can be returned in a few hours via FTP or stored on an encrypted external hard drive and shipped back to the customer.

Backup, Recovery & More

Although hard drive recovery is DataRecovery.com's expertise, the company excels in many other areas. For example, DataRecovery.com offers an online backup service, computer forensics, DAT and DLT tape duplication, iPod data recovery, password recovery, and data erasing services.

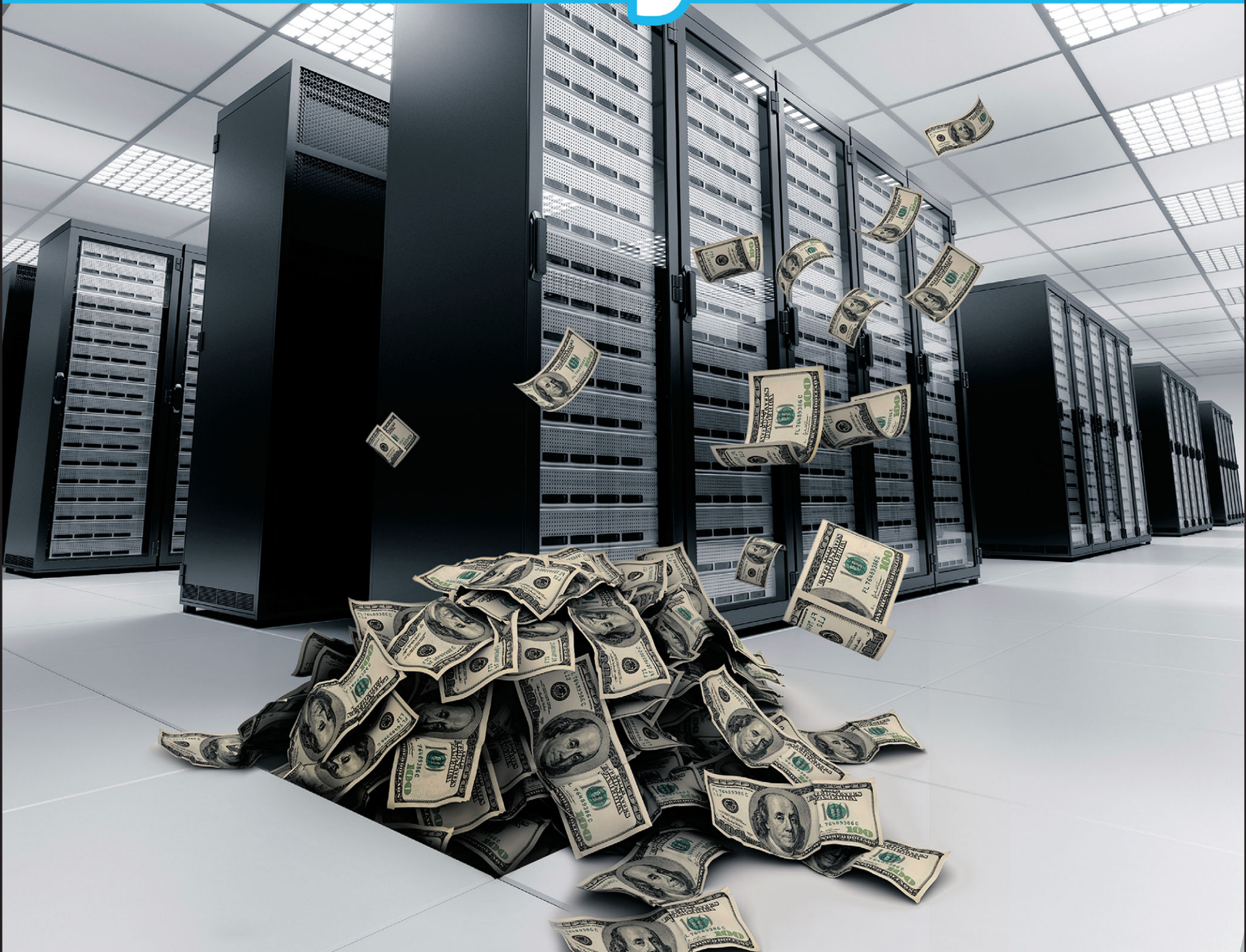
What sets DataRecovery.com apart from other data recovery companies, Carmitchel says, is research. "We hire professionals from all over the globe that have put together the best data recovery people, processes, and tools in the industry," he says. "We believe we are the first company to offer nearly all logical remote recovery processes in a virtualized environment. Many of our competitors rely on third-party tools and applications instead of truly understanding the problem and the fix. Without this understanding, success would not be as high." ■

**Contact:**  
(800) 237-4200 | [www.datarecovery.com](http://www.datarecovery.com)





# It's Not Just Air



# It's MONEY

Sealing cable openings is about more than plugging holes.

As energy costs rise and density demands increase, greater sealing capabilities result in more money saved than before.

**ACCEPT** seal with the best  
**NOTHING**  
**LESS**





Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you have an event you'd like listed, please send an email to [feedback@processor.com](mailto:feedback@processor.com).

- DECEMBER -

**ISSA Upstate South Carolina**  
Dec. 17  
ECPI

1001 Keys Drive #100  
Greenville, S.C.  
[www.upstate-issa.org](http://www.upstate-issa.org)

**ISSA St. Louis Chapter**  
Dec. 21

St. Louis, Mo.  
[stl.issa.org](http://stl.issa.org)

**Oklahoma City AITP Chapter**  
Dec. 21

Oklahoma City, Okla.  
[www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40](http://www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40)

**ISSA Des Moines**

Dec. 27  
3920 SW Camden Circle  
Ankeny, Iowa  
[www.issa-desmoines.org](http://www.issa-desmoines.org)

2011  
- JANUARY -

**Cisco (SWITCH): Implementing Cisco Switched Networks**

Jan. 3, 9 a.m.  
Online Live  
[www.nhnorthflorida.com](http://www.nhnorthflorida.com)

**BICSI Winter Conference**  
Jan. 16-20

Rosen Shingle Creek  
Orlando, Fla.  
[bicsi.org/winter/2011/event\\_overview.aspx?id=4818](http://bicsi.org/winter/2011/event_overview.aspx?id=4818)

**Cisco (ICND1): Interconnecting Cisco Network Devices Part 1**

Jan. 17, 9 a.m.  
Online Live  
[www.nhnorthflorida.com](http://www.nhnorthflorida.com)

**Central Ohio VMware Users Group**

Jan. 18, 8 a.m.  
Platform Labs  
1275 Kinnear Road  
Columbus, Ohio  
[www.platformlab.org](http://www.platformlab.org)

**SharePoint 2010**

Jan. 20, 9 a.m.  
New Horizons Webinar  
[tinyurl.com/NHWebinar12011](http://tinyurl.com/NHWebinar12011)

Jan. 20, 1 p.m.

New Horizons Dayton  
1890 Commerce Center  
Fairborn, Ohio  
[tinyurl.com/NHDayton12011](http://tinyurl.com/NHDayton12011)

Jan. 21, 9 a.m.

New Horizons Cincinnati  
10653 Techwoods Circle  
Cincinnati, Ohio  
[tinyurl.com/NHCincy12111](http://tinyurl.com/NHCincy12111)

**Cisco (ICND2): Interconnecting Cisco Network Devices Part 2**

Jan. 24, 9 a.m.  
Online Live  
[www.nhnorthflorida.com](http://www.nhnorthflorida.com)

**Datalink's Advanced Virtualization/Cloud Technology Event**

Jan. 25, 11 a.m.  
Platform Labs  
1275 Kinnear Road  
Columbus, Ohio  
[www.platformlab.org](http://www.platformlab.org)

**PMP – Project Management Professional**

Jan. 31, 9 a.m.  
Online Live  
[www.nhnorthflorida.com](http://www.nhnorthflorida.com)

- FEBRUARY -

**Southern California Linux Expo**  
Feb. 25-27

Hilton Los Angeles Airport Hotel  
Los Angeles, Calif.  
[www.socallinuxexpo.org/scale9x](http://www.socallinuxexpo.org/scale9x)

Study: Laptop Loss Is A Big Problem

According to a study called “The Billion Dollar Lost Laptop Problem,” businesses are losing incredible amounts of money to lost laptops. The study, which was commissioned by Intel and conducted by the Ponemon Institute, showed that, altogether, the 329 organizations surveyed lost more than 86,000 laptops worth an estimated \$2.1 billion in the past year. In addition to the capital loss of the computers, companies faced losses from data breaches, lost intellectual property, employee downtime, and even legal charges stemming from missing laptops. A quarter of the missing laptops were stolen, but 60% were simply lost. About a third of the losses occurred at transportation sites such as airports, and more than 40% went missing at perceived safe places such as homes and hotel rooms.

Motorola To Split Company In January

Motorola’s board of directors approved a proposal in early December to split the company into two separate publicly traded companies—a consumer-targeted side and professional business side—effective Jan. 4. Following the move, Motorola Mobility will handle consumer-related business, while Motorola Solutions will handle professional business. Shareholders will receive shares in each business. Plans for the split originally surfaced in 2008 but were delayed due to the economic downturn. In conjunction with the split, Motorola plans to sell its division that produces network equipment for cell phone providers to Nokia Siemens Networks in a deal expected to finalize by year’s end. Motorola has recently made a return to profitability, announcing in October its first quarter of annual revenue growth since 2006—an upturn that is due in large part to the company’s successful Droid, Droid 2, and Droid X lines of handsets.

Government Backs Cybersecurity Collaboration

The White House has announced that federal agencies and the financial services industry will partner to speed up the commercialization of technologies designed to enforce cybersecurity for the government and the private sector. Several organizations, including the Department of Commerce’s National Institute of Standards and Technology, the Science and Technology Directorate of the Department of Homeland Security, and the Financial Services Sector Coordinating Council, released a Memorandum of Understanding to detail the collaboration. The agreement is designed to facilitate the development and deployment of cybersecurity innovations and establish clear processes in particular infrastructure cases.

IP Company Sues McAfee, Symantec & Others Over Patents

Intellectual Ventures, a patent-oriented intellectual property firm founded by former Microsoft CTO Nathan Myhrvold, has filed suit in Delaware’s U.S. District Court against a total of nine technology companies, including major security application vendors such as Symantec and Check Point Software Technologies, as well as other technology companies. The suit alleges that the companies violated Intellectual Ventures’ patents in the areas of software security, DRAM and flash memory, and field-programmable gate arrays. Intellectual Ventures does not produce products, relying instead on the acquisition, licensing, and protection of patents to create revenue.

EMC Employees Charged With Theft

Two employees of network data storage, consulting, and infrastructure giant EMC have been charged with stealing more than \$1 million in equipment from EMC facilities and trying to sell the equipment on the Internet. Charged were Kevin Kelly, of North Carolina, and Massachusetts resident Mark Rothfuss. Also charged was BL Trading, a Massachusetts-based company the feds allege was involved in selling or transporting the stolen goods. EMC cooperated with the investigation, helping track down Kelly and Rothfuss. Kelly worked at EMC’s Apex, N. C., facility; he was also charged with identity theft for allegedly using the identity of an associate to sell stolen goods.

Group Created To Outline Endpoint Security Standards

ICSA Labs has established what it calls the Endpoint Security Consortium as a method of developing a set of tests and standards against which security products such as anti-malware, firewalls, and host IDS/IPS software can be measured. ICSA is inviting input from industry experts as it creates the standards and has already enlisted AVG, McAfee, and Microsoft. The lab also has plans to create a list of best practices for securing end points. Currently, the consortium is reviewing the ICSA’s draft. Once the draft is finalized, the lab will be able to accept products for testing.

Server Shipments Post Solid Growth

The server market showed gains in both shipments and revenue during the third quarter, according to research firm Gartner. Third-quarter shipments were up 14.2% year over year, and revenue was up 15.3% from a year ago. x86-based servers drove the market, showing 14.9% growth in shipments and 29.5% growth in revenues. In addition, the average selling prices for x86 servers also increased. HP led in terms of revenues, with 32.1% of the market, followed by IBM with 30.2%, Dell with 14.6%, and Oracle with 6.2%. HP, Dell, and IBM were also the top three in terms of shipments.

Tech-Savvy Employees Promote Employers More

New information from Forrester Research shows that there may be a connection between employees who are technology optimists and their overall views of their employers. Forrester’s Workforce Forrsights survey found that employees who are optimistic about technology and well-equipped with information and communications technology, such as smartphones and social media tools, are more likely to be company advocates, according to senior analyst Matthew Brown. In a somewhat surprising finding, Forrester’s survey showed that IT professionals scored lowest in terms of being employer advocates; employees in sales, HR, and finance scored highest.

Research Shows Wi-Fi Sales Are Booming

According to research firm Infonetics, Wi-Fi equipment sales are rising sharply. For Q3 2010, global wireless LAN equipment revenue grew to \$680 million, an increase of 14% compared to the previous quarter; compared to Q3 2009, revenues are up 12%. Analysts believe the market’s upward surge is due in large part to the stellar sales of Wi-Fi phones and 802.11n equipment. Single-mode Wi-Fi phone shipments rose 20% compared to Q2, and 802.11n access points now account for nearly half of all access point shipments (44%).

Survey Highlights Videoconferencing Concerns

UK-based IT services firm Damovo reported the results of its latest videoconferencing survey, which found that 39% of office staff get videoconferencing stage fright, and 10% liken videoconferencing to public speaking. Of those who are unperturbed by video communications, 19% admit that their workspace is not suitable for videoconferencing. Despite the reservations, Damovo’s survey also revealed the effectiveness of videoconferencing: 63% of those polled say they would be more likely to follow through on a task following a videoconference than they would be had they just received the same instruction in an email. Furthermore, 69% agree that a big drawback of online communication is the lack of face-to-face interaction.

Internet Explorer Market Share Continues To Decline

A recent study by Net Applications indicates that Microsoft’s efforts to wean customers off of its IE6 Web browser is working, but to the detriment of its overall IE market share. IE6’s market share fell to 10.3%, a decrease of 1.3%, while total IE market share fell almost a whole percentage point to 58.4%—its lowest share ever—in the month of November; the loss represents IE’s largest decline since March and another notch in IE’s overall downward trend. Apple and Google both saw gains of 5.6% and 9.3%, respectively, for their Safari and Chrome Web browsers.

IBM Reports Breakthrough In Chip Research

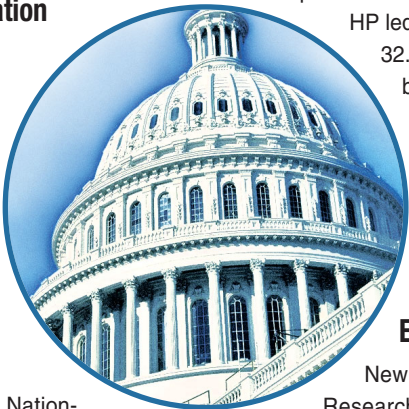
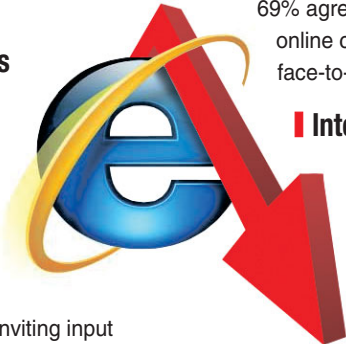
After a decade of work, researchers at IBM announced a breakthrough in silicon nanophotonics, in which computer chips send signals with light instead of electricity. IBM’s chip, which combines optical and electrical components on a single piece of silicon, turns electrical signals generated at the transistor level into light pulses, resulting in faster data transfer speeds between chips. IBM says this technology, dubbed CMOS Integrated Silicon Nanophotonics, could result in supercomputers that are 1,000 times faster than current machines. The company plans to use silicon nanophotonics in its project to build an exascale supercomputer capable of performing a million trillion calculations per second.

Green Grid Introduces New Energy Efficiency Metrics

The Green Grid announced two additional metrics to be used alongside its popular PUE metric, which is used in data centers to rate energy efficiency. The new metrics, CUE (Carbon Usage Effectiveness) and WUE (Water Usage Effectiveness), will help determine the carbon emissions and water usage within a data center. CUE and WUE metrics aim to help enterprises use natural resources in the most efficient way possible, in order to lower consumption and create a sustainable data center. More details are to follow, as the company has promised to deliver more information in March 2011.

Malware-Affected Sites Double In 2010

In the third quarter of this year, 1.2 million Web sites were affected by malware, according to a study by Internet security company Dasient. The number of malware-infected sites is double that of a year ago. All manner of sites are being hit, including government and social media sites, according to Dasient. In terms of attack types, drive-by downloads are the most common, surpassing older forms of incursion such as spam and email attachments.





STATS & FACTS

PROVIDING THE LATEST INSIGHT & INFORMATION FROM LEADING RESEARCH FIRMS

# Where In The World Is Our Energy Going?

The International Energy Agency's annual World Energy Outlook report paints a somewhat gloomy picture of future energy use.



- 36

The percentage increase in worldwide primary energy demand between 2008 and 2035.
- China

Overtook the United States to become the world's largest energy user. However, it's also leading the way in efforts to use new low-carbon energy technologies.
- 99 million

The number of barrels of oil we're expected to go through each day by 2035 (up 15 million from 2009). The cost of each barrel? \$113.
- 3.5°C

The expected average temperature increase by 2035. The Copenhagen Accord called for keeping the increase to below 2 degrees Celsius.

# Back At The Data Center Level

There's no doubt that emerging from the economic recession is a great thing, but it may take its toll on data center energy costs. Research group Gartner reports that data center power, cooling and energy supply, and cost problems are likely to worsen during the next few years.

"Organizations need to forcefully control their energy consumption and costs," says Rakesh Kumar, research vice president at Gartner. "Data center operators need to measure energy-related data across the whole site, including the building, the facility's components, and the IT equipment portfolio," he says.

**What's needed to be able to do that?**

- Continuous PUE readings. By 2015, 80% of new large data centers will report those readings.
- The ability to measure power use across six areas: building, electrical facilities, building facilities, racks, IT hardware, and virtual machines.
- A more pragmatic approach that will lead to better planning.

# Now Down To The Server Level

Enterprises are investing in server upgrades, according to Forrester, with 25% of companies expecting the amount of money they spend on servers to increase between 5 and 10%. Along with that, more organizations are taking advantage of server virtualization, which can help to reduce energy consumption.

**Forrester analyst Doug Washburn has three recommendations to better take advantage of the energy savings possible through virtualization:**

- 1 Increase the virtual-to-physical footprint, and if a server isn't running any workload, either shut it off or decommission it.
- 2 Maximize your virtual machine to physical host and utilization ratios; most servers can accommodate 15 virtual machines.
- 3 Look for more energy-efficient servers and architectures.

# ENCLOSURES & RACKS

Hergo is a U.S. designer and manufacturer of Technical Workspace Solutions.

- Command Centers

■ Control Stations

■ PACS - Mobile Carts
- Relay Racks

■ Flat Panel Monitor Arms

■ Motorized Work Stations





PRODUCT RELEASES

The *Processor* Product Releases section includes brief overviews of data center products.

All products listed have been released recently, so use this section to get up to date with what's new on the market and to find products you need.

**Manufacturers:**  
Do you have a new product that data center/IT managers would be interested in learning about?  
Send your press release or product information to [press@processor.com](mailto:press@processor.com).

PHYSICAL INFRASTRUCTURE

■ Perle IOLAN SDSC Dual Ethernet Terminal Servers

Perle Systems released its latest IOLAN SDSC Dual Ethernet Terminal Servers. The units support multiple RS-232, RS-422, or RS-485 devices with encryption and authentication. The terminal servers feature a 750-MIP processor and come with 8, 16, or 32 software-selectable RS-232/422/485 serial port interfaces and Dual 10/100/1000 Ethernet ports.

NETWORKING & VPN

■ Attachmate FileXpress 7.0

Attachmate released FileXpress 7.0, a suite of products targeted at the MFT (managed file transfer) software market. Version 7.0 eases the chore of securing file exchanges among business partners and customers via extension of MFT abilities to Microsoft Windows Server 2008 R2. FileXpress also enhances automation and auditing abilities to manage file transfers within organizations.

■ CloudShare ProPlus

CloudShare's ProPlus lets you manage virtual environments online. It features editable RAM; up to 10GB and 300GB of disk space; and preinstalled OSes and applications, such as Linux, Windows 7, SharePoint 2010, and Oracle 11g. It can also be used on as many as six virtual machines.

■ Dialogic Survivable Branch Appliance

Dialogic released SBA (Survivable Branch Appliance) software for its Dialogic 4000 Media Gateway Series. Part of Microsoft Lync Server 2010, SBA offers communication and connectivity to those in branch offices, including when a WAN connection goes down to centralized data centers hosting Lync Server 2010. Thus, call, voicemail, intra-office IM, and audio conferences are still available to the gateway.

■ Digi International Connect WAN 4G & ConnectPort X4 4G

Digi International released the WAN 4G and ConnectPort X4 4G, which the company claims are the industry's first commercial-grade integrated 4G routers. Sprint- and Clear-certified, the Connect WAN 4G includes RS-232 serial, USB, and Ethernet connections, while the ConnectPort X4 4G adds ZigBee to WiMAX connectivity. The routers also integrate into the company's iDigi cloud computing platform.

■ HP Application Lifecycle Management 11

HP announced HP Application Lifecycle Management 11, which is designed to unite and automate modernization applications. Features include accelerated application deployment; better test creation; the reduction of an application's defects; and the ability for clients to reduce costs, mitigate risk, and accelerate implementation timelines.

■ Infoblox Microsoft System Center Operations Manager Management Packs

Infoblox announced two management packs designed for the Microsoft System Center Operations Manager, which were developed after the company joined the

Microsoft System Center Alliance. The integration packs are designed to offer network managers excellent visibility from a single console into their Infoblox DNS, DHCP, IPAM, and NCCM infrastructures.

■ ManageEngine ServiceDesk Plus 8.0

ManageEngine released version 8.0 of ServiceDesk Plus, the company's ITIL-ready help desk application. The release features a new, customizable service catalog that allows IT teams to easily organize and publish a complete list of all help desk services available and to maintain a comprehensive workflow for service requests.

■ NaviSite NaviCloud

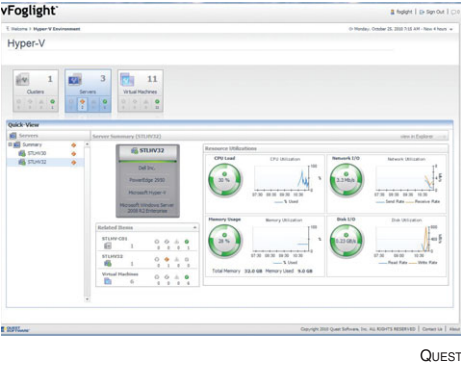
Managed cloud services provider NaviSite announced its latest management and control features for the NaviCloud platform. The features, which include Role Based Access Control, Airlock, and Dynamic Resource Instrumentation, provide increased flexibility, security, and control for cloud-based enterprise applications. The features are accessed through AppCenter, which is NaviSite's Web-based console for managing resources on the NaviCloud platform.

■ Oracle Exalogic Elastic Cloud T3-1B

Oracle announced Oracle Exalogic Elastic Cloud T3-1B, a product designed to give the Oracle Exalogic Elastic Cloud system the scalability and availability of SPARC Solaris servers in large deployments. Features include support for Java and non-Java applications, multithreading optimization, in-depth hardware analysis and failure detection, the Oracle Solaris SMF (Service Management Framework) to reduce downtime, and the efficient and secure isolation of middleware components for hardware utilization. With the integrated Oracle Solaris Zones feature, customers can consolidate their existing Oracle Solaris applications to the Exalogic Elastic Cloud. The device is also optimized for integration with other Oracle products.

■ Quest Software vFoglight 6.5

Quest Software released its latest virtualization performance management, monitoring, and capacity planning solution, vFoglight 6.5. This version of



vFoglight offers extended hypervisor support for VMware ESX and Microsoft Hyper-V. It can manage Microsoft Active Directory and Microsoft Exchange, as well. vFoglight's event remediation makes it possible for admins to speed up mean-time-to-resolution and to activate automated workflows. The new user perspectives give administrators tailored views for monitoring and chargeback. It also saves administrators time by allowing them to perform common daily VM tasks. VFoglight 6.5 is one component

in Quest Software's line of virtual infrastructure solutions that include vFoglight Storage and vFoglight QuickView.

■ SECUDE FinallySecure Management Console

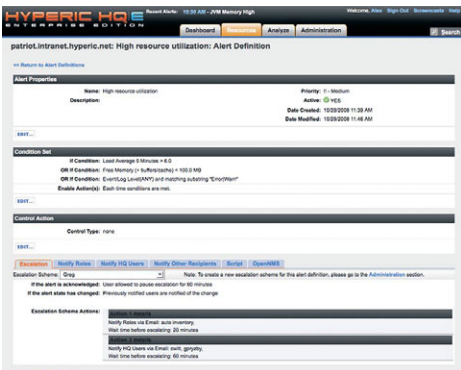
Secude announced the availability of the FinallySecure Management Console for remote configuration and enterprise client decommissioning. The console features an enhanced interface that's accessible via any browser. In addition to reporting and auditing capabilities, its primary features include a general search function, an improved policy wizard, and support for MySQL, MS SQL Server, and Oracle.

■ Veloxum For VMware

Veloxum for VMware actively and continuously optimizes the VMware infrastructure to maximize performance and increase workload density as much as 50%. The out-of-band solution uses the existing systems and tunes the various components within manufacturer supported settings. Veloxum is designed to allow enterprises to realize the full potential of their IT infrastructure.

■ VMware vFabric Hyperic Integrated With Zimbra Appliance

VMware has announced that vFabric Hyperic, which provides application performance monitoring abilities, is now part of its enterprise-class VMware Zimbra Appliance, which provides email and collaboration in a virtual appliance. Administrators of Zimbra appliances now have access to faster and more efficient oversight of critical email and



collaboration services so that they are available to end users at all times. Use of vFabric Hyperic requires no additional setup while providing a set of performance-related metrics for availability, throughput, and utilization. Hyperic is available in HQ (free) and commercial (\$300 per Zimbra server) versions. Pricing starts at \$625 per 25 mailboxes for a perpetual license.

■ XRoads Networks MVP Routing

XRoads Networks released updates for its MVP (Multiple Vector Prioritized) Routing technology, which provides optimized network connectivity between multiple WAN links. It features MVP Routing that combines multiple ISP/WAN links to produce greater reliability and increase available bandwidth. The MVP Routing allows users to select the best method for balancing traffic across various available links.

STORAGE

■ Addonics Universal Flash Media Duplicator

Addonics released the Universal Flash Media Duplicator, a standalone cloner

for flash memory cards. With the press of a button, the Universal Flash Media Duplicator will copy all major types of memory card, including SD, CompactFlash, Memory Stick, and more, at up to 133MBps, Addonics says. It sells for \$299.

■ Dot Hill Systems AssuredSAN 3320 & 3330

Dot Hill Systems announced a pair of four-port 1Gb iSCSI storage arrays, the AssuredSAN 3320 and AssuredSAN 3330. Designed to deliver high performance and high capacity, the arrays feature four ports of iSCSI over Gigabit Ethernet, support for dual or single RAID configurations, data-in-place migration, and energy-saving features such as the company's proprietary EcoStor battery-free alternative for cache memory.

■ NovaStor NovaBACKUP BE Virtual

NovaStor released its NovaBACKUP BE Virtual solution that protects and backs up virtual machines running on VMware servers. It features agentless backups, online and offline backups, and incremental and differential backup options. NovaBACKUP BE Virtual also allows you to restore any number of machines on one VMware server using only one license. It supports all VStorage API licensed VMware ESK(i) 4.0+ and vSphere servers. While the regular price for this solution is \$999.95 per license, it currently has a limited-time introductory price of \$599.95. A 15-day free trial is also available.

■ PHD Virtual Backup 5.1

PHD Virtual announced its Backup 5.1 solution for VMware vSphere. It features support for multiple backup and restore streams, TrueRestore technology for integrated data checks, and TrueDedupe technology for source-side data deduplication. Backup 5.1 is deployed as a virtual appliance.

■ QNAP TS-239 Pro II+, TS-439 Pro II+

QNAP released the TS-239 Pro II+ and TS-439 Pro II+, midrange business NAS servers that support two and four SATA hard drives, respectively. Both models come with an Intel D425 single-core Atom processor, along with support for RAID and hot-swapping. They're also compatible with VMware, Citrix, and Windows 2008 Hyper-V.

■ QNAP TS-459U-RP+, TS-459U-SP+ & TS-859U-RP+

QNAP released a line of Business Series Turbo NAS models with dual-core Intel Atom D525 1.8GHz processors onboard. The three rackmount units include the four-drive TS-459U-RP+ and TS-459U-SP+, supporting up to 8TB of capacity, and the eight-drive TS-859U-RP+ with up to 16TB of storage.

■ RAIDON Technology iR2620

RAIDON Technology released its iR2620, a two-bay RAID storage module for 3.5-inch drives in industrial control environments. The iR2620, which fits in a pair of 5.25-inch optical drive bays, supports RS-232, RAID 0/1, hot-swapping, and automatic rebuilding. It has removable drive trays and a front LCD panel.



PRODUCT RELEASES

■ SAP HANA 1.0

SAP recently announced version 1.0 of its data management software HANA (High-Performance Analytic Appliance). HANA 1.0 features an in-memory computing engine as well as a calculation engine that makes it easier to create databases that meet industry standards, such as MDX and SQL.

■ StoneFly Storage Concentrator Virtual Machine

StoneFly revealed the SCVM (Storage Concentrator Virtual Machine), a virtual software appliance that makes it possible to consolidate a virtual data center. Paired with StoneFly Hybrid Replication, the SCVM can support instantaneous recovery during disasters. It also provides local replication, remote replication, secondary IP SAN storage, and backend storage for archiving, cloud appliances, and deduplication.



■ STORServer Enterprise Backup Appliance

STORServer released the STORServer Enterprise Backup Appliance, the fifth generation of the company's data backup appliance. The latest version includes improvements aimed at helping users better meet their data protection, backup, archive, and disaster recovery

requirements. This version offers improved performance as well as built-in data deduplication for enterprise-wide data protection, unified recovery management, and effective data reduction. The appliance is based on IBM's Tivoli Storage Manager (TSM) v6.2, currently being used by some 20,000 customers around the world. With IBM's DB2 database as a backbone, the STORServer Enterprise Backup Appliance can store more than 2 billion indexing objects per server.

■ Venyu RestartIT

Venyu is reintroducing the offsite protection platform, RestartIT, designed for timely recovery after data loss, disasters, or outages. Three customizable platforms are available: RestartIT PLUS, RestartIT PLUS BMR (Bare Metal Restore), and RestartIT-DR. RestartIT PLUS BMR restores and recovers both physical and virtual failed servers. RestartIT-DR offers comprehensive IT disaster recovery remediation.

■ Winchester Systems EcoRAID

Winchester Systems announced its EcoRAID line of RAID disk arrays. The EcoRAID expands to 96TB with iSCSI, SAS, and Fibre Channel host ports. EcoRAID is a 2U base unit with single or dual redundant enterprise-class, active-active failover controllers, and 12 SAS or SATA disk drives up to 2TB each for up to 24TB total.

SECURITY

■ eIQnetworks ForensicVue

ForensicVue, from eIQnetworks, is a forensic search engine that lets a

company's security professionals search through any security data located on its network. ForensicVue features stored queries, support for multiple OSes and applications, and the ability to search through log events, net flow, and third-party application data.

■ Endpoint Protector AutoRun Disable Tool

Endpoint Protector announced the free AutoRun Disable tool to head off malware infections spread via USB ports and other PC interfaces. AutoRun Disable makes it possible to disable the AutoRun feature on Windows XP, Vista, and 7. This tool can select AutoRun cancellation based on specific device types or hard drive letters.

■ Fortinet FortiGate-5001B & FortiSwitch-5003B

Fortinet announced the FortiGate-5001B, the latest product in the FortiGate-5000 series, as well as a high-performance switching option called FortiSwitch-5003B. The FortiGate-5001B features critical security services as well as support for 10-Gigabit Ethernet. The FortiSwitch-5003B features low latency for better multithreat security performance.

■ Juniper Networks SRX1400

Juniper Networks announced the SRX1400, which is a consolidated security services gateway that's ideal for securing small to midsize enterprise, service provider, and mobile operator data center environments. The SRX1400 consolidates multiple security functions, including Juniper Networks' AppSecure  
*Go to Page 8*

ATTENTION  
PRODUCT  
MANUFACTURERS:

Dou have a  
**NEW PRODUCT**  
that data center/IT  
managers would  
be interested  
in learning about?

Send your press release or  
related product information  
to [press@processor.com](mailto:press@processor.com).

WHO DO THE  
BIGGEST NAMES IN SERVERS, SEARCH,  
CLOUD & FINANCIAL SERVICES  
TRUST TO PROVIDE POWER MANAGEMENT  
SOLUTIONS?

For 25 years, Server Technology has been providing the world's biggest companies with trusted power management solutions. Solutions to improve uptime and energy efficiency while reducing carbon footprint and operating costs. Solutions that give you the critical information you need to run your data center better.  
To learn more about our entire line of rack level Intelligent Power Distribution Units and our Sentry Power Manager™ monitoring system, visit [www.servertech.com](http://www.servertech.com) today.



[www.servertech.com](http://www.servertech.com)

1-775-284-2000

EMEA: +44 (0)1628.509053

APAC: +65 9739.0396

Germany: +49 202 693917x0

Email: [salesint@servertech.com](mailto:salesint@servertech.com)



PRODUCT RELEASES

*Continued from Page 7*

application security capabilities, on a single services gateway to provide the flexibility to scale bandwidth and services in the future. For mobile service providers, the SRX1400 is a cost-effective solution for delivering security at scale to their core networks and protects against a variety of attacks and unauthorized access on critical infrastructure. The modular design of the SRX1400 uses interchangeable cards from the SRX3000 line to provide investment protection and simplify sparing logistics.

■ Portwell CAR-1000

The CAR-1000 is a 1U rackmount communication appliance from Portwell that comes with your choice of Atom processors to tackle a variety of applications,



including network security and memory-intensive tasks. It comes with a mini-PCI slot and six Gigabit Ethernet ports, plus a reset button to immediately return the unit to factory default settings.

■ St. Bernard iPrism 500h

The 500h is the newest Web filter appliance in St. Bernard's iPrism lineup for the enterprise. Designed to curtail bandwidth-wasting activity such as unauthorized media streaming, this flagship model doesn't wear out its welcome with unwanted latency and complexity, the company says. A pair of quad-core Intel Xeon Westmere 5677 processors provides a total of eight processing cores running at 3.47GHz each. The iPrism 500h requires no caching or external applications, but it does benefit from a subscription service covering upgrades, hardware upkeep, and tech support.

MESSAGING & TELEPHONY

■ Barracuda Email Security Service

Barracuda Networks unveiled the Barracuda Email Security Service, a full-featured, cloud-based email filtering service, which can also be deployed as a cloud protection layer for the Barracuda Spam & Virus Firewall. Features include email burst handling, automatic updates in real time, and email encryption in the cloud.

■ DataMills EdgeSafe PST2PST Migrator

DataMills announced the release of its EdgeSafe PST2PST Migrator, a Google Apps tool that automatically migrates Outlook PST files to Gmail. The product supports phased migration and provides an enterprise-class solution with a central control station to help manage the migration. The tool can migrate PST files even while Outlook is running.

SERVERS

■ Oracle SPARC Enterprise M-Series Servers

Oracle and Fujitsu launched the enhanced SPARC Enterprise M-Series server product line. The joint offering features the SPARC64 VII+ processor running at a clock speed of up to 3GHz, with up to 12MB L2 cache for a 20% performance increase. The SPARC Enterprise M-Series server runs Oracle Solaris.

■ Oracle SPARC Supercluster

Oracle released its SPARC Supercluster, which is based on SPARC T3 and M5000 servers and is designed to run on Oracle database RAC environments. Oracle's

SPARC Supercluster consists of SPARC servers, FlashFire, InfiniBand QDR, Oracle Solaris, and the ZFS Storage Appliance. The Oracle SPARC Supercluster will be available next year.

CLIENTS

■ Giada N20 ION2 Mini PC

Giada PC released its slim N20 ION2 mini PC, which measures just 6.3 x 6.9 x 0.9 inches (HxWxD) and weighs only 1.5 pounds. The mini PC features a dual-core Intel Atom D525 or D510 processor, up to 4GB of RAM, and integrated Nvidia



GT218 ION2 graphics. It comes with a 320GB hard drive, with up to a 1TB hard drive or 240GB SSD available as an option, and uses a DC19V external power supply. There are ports for USB 2.0, HDMI, VGA, memory cards, and Gigabit LAN; 802.11n Wi-Fi; and Bluetooth connectivity options. For more on this product, see page 43.

■ Kyocera FS-C5250DN & FS-C5150DN

Kyocera released the FS-C5250DN and the FS-C5150DN, two color printers that are part of Kyocera's environmentally friendly line of ECOSYS printers. The Energy Star-certified printers provide 600dpi color quality, the ability to print to various paper stock, and a 500-sheet input tray and 50-sheet multipurpose tray. The FS-C5250DN prints at 28ppm and is priced at \$959, while the FS-C5150DN prints at 23ppm and is priced at \$1,569.

■ Océ Canon imageRUNNER ADVANCE C2030/C2020

Océ announced that Océ North America Document Printing Systems is now selling the Canon imageRUNNER ADVANCE C2030 and C2020 color multifunction printers. Designed for workgroups, branch offices, and small businesses, the printers feature the imageRUNNER ADVANCE Essentials software suite, a 5.7-inch high-resolution color user interface, and support for Canon's MEAP technology.

■ Southco AV-D30

Southco, a manufacturer of access solutions including latches, locks, and fasteners, released its AV-D30 dynamic mounting arm. The AV-D30 was developed for mounting displays in mobile environments and does not require the use of set screws or other end-user adjustments to hold the display in position. The VESA-compliant device is aimed at the transportation, off-highway, and agricultural industries.

SERVICES

■ Laurus Technologies Cloud Readiness Assessment Service

Laurus Technologies launched its Cloud Readiness Assessment Service, aimed at helping enterprises determine the value of moving all or portions of its infrastructure to the cloud. Services include customer discovery, identification of applicable cloud services, gap analysis, and recommendations in each potential cloud capability.

Processor  
is now  
on Facebook  
and Twitter!

Follow us at  
[www.twitter.com/ProcessorPub](http://www.twitter.com/ProcessorPub)  
or search for "Processor"  
on Facebook Groups



PROCESSOR.

Call (800) 819-9014 to subscribe to *Processor* or go to [www.processor.com](http://www.processor.com) to read articles and view thousands of products online free of charge to qualified readers.



BayTech®

IIII

www.baytech.net

33 Years Made in the USA

# Going Green!!!

Power Factor is Real  
and now it's Real-Time with the MRP Power Solution

Reach operational efficiency and conform to new Green Energy standards with the MRP outlet monitoring solutions.

BayTech's metered outlet modules report Amps, Voltage, VA, Watts, power factor and efficiency per receptacle.

Through our secure SNMP engine thresholds can be set to help identify equipment that is running inefficient.

## Standard Features

- Single Phase and Three Phase
- 20,30,50,60 Amp Support
- On, Off, Reboot option
- HTTPS, SSH, SSL Access
- Radius, TACACS Authentication
- Tool less Mounting

## Unique Features

- Modular Design
- All Receptacles Monitored
- Power Factor per Outlet
- kW Hour Meter per Outlet
- Current, Voltage and VA and Watts
- Reliable PCB Power Distribution
- Fail Functional Design



## Metered Outlet - MRP

Additional Unique Features



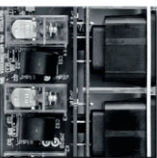
**All Circuit Breakers Monitored**  
Most metered power solutions only monitor input power. BayTech monitors all circuit breakers and reports via SNMP when thresholds are met.



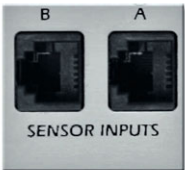
**Outlet Metering with Efficiency**  
Monitor individual outlets and receive current, watts, and volt-amps. Continuously monitoring equipment for efficiency with power factor.



**Locking C13 Receptacle Optional**  
Reliable integrated locking clips assure power cord retention. Unique to the industry and does away with nuisance wire clips.



**Reliable PCB Power Distribution**  
ISD's (Insulation Displacement) connectors are faulty and unreliable! All BayTech power solutions use reliable PCB power distribution.



**Integrated Sensor Inputs**  
Eliminate the need for extra environmental monitoring devices. All BayTech power solutions offer two ports for external temperature and humidity probes.

Bay Technical Assoc. Inc. 5239 A Avenue Long Beach, MS 39560 Tel: 228-563-7334 Fax: 228-563-7335 sales@baytech.net



ISO9001:2008 CERTIFIED

# RACKMOUNT SOLUTIONS

Server Racks • Server Cabinets • Wallmount Racks • LAN Racks  
Network Racks • Portable Rackmount Cases • Accessories  
GSA Schedules • Custom Racks Manufactured As Needed

Our products are a solid value for your time and money. We pride ourselves in providing quality customer service. Please call us at (866) 207-6631 and let us know how we can solve your rackmount needs or visit [www.rackmountsolutions.net](http://www.rackmountsolutions.net).





## Mobile Health App Usage On The Rise

According to a report from mobile market research firm research2guidance, the use of mHealth (mobile health) apps is growing. The report, entitled “Global Mobile Health Market Report 2010-2015,” estimates that 500 million smartphone users, out of a total of about 1.4 billion, will be using mobile apps for healthcare by 2015.

The study examined the opinions of startup companies and mHealth and traditional healthcare market players with experience publishing applications for smartphones. Covered were the smartphone market, the current state of the mHealth market, and the mHealth outlook for 2015, with the goal of providing a better understanding of the market, its driving factors, and future developments. There were 231 participants, including companies such as AT&T, Bayer, IBM, and Nokia.

### mHealth Consumer Benefits

To those in the healthcare industry, mHealth apps present the potential to improve healthcare delivery and broaden the dissemination of medical information. With the new technological capabilities of smartphones, patients and doctors can receive healthcare products or services while on the go, which has proven especially appealing for consumers.

According to Ralf-Gordon Jahns, head of research at research2guidance, nearly 60% of mobile health apps target consumers, and most of these are simple apps, such as those for general health tracking and fitness. About 17,000 mobile health apps are now available, with 74% of those made available through application service providers. Currently, 43% of mobile health apps are designed for healthcare professionals, including apps for remote monitoring and healthcare management. research2guidance believes that by 2015, 76% of mHealth revenue will come from mobile health-related services and products and 14% will come from app downloads.



Consumers are seeing the life-saving potential in mHealth, and healthcare professionals are seeing the potential to keep tabs on their patients like never before. Jahns expects the market to continue to be consumer-driven, predicting that consumers will see the value in apps that improve their health and give them access to medical information. They will also be willing to pay for these apps, Jahns says, because it will make their lives easier.

by Patrick Kean

# Trends In Power Management

## Expect Increased Interest In Power Monitoring & Intelligent Cooling In The New Year

by Dan Heilman

THE NEW YEAR IS fast approaching, and with it comes new concerns and questions about trends and technologies to look for in data centers, especially in the area of power management. Here’s a look at what industry experts say are the power management issues that we’ll be talking about in 2011.

### Keeping An Eye On Power

More than any other, power monitoring is the catch phrase for 2011. Watch for there to be stricter and more frequent reviews of power needs and how to reduce the overall



### Key Points

- Long-term power savings means higher voltages in data centers are becoming common.
- Organizations are finding that efficient cooling is making power easier to manage and less costly.
- Branch circuit monitoring is becoming obsolete, with that work being done at the server level.

demand within data centers, says David Matusow, an architect with the Center of Excellence at SunGard Availability Services ([www.availability.sungard.com](http://www.availability.sungard.com)). More companies will want to increase the monitoring of data demands by various pieces of technology. “Currently, very few organizations do an actual review of their demand and how it can be reduced,” Matusow says. “This is changing. Some of this change is a direct result of data center managers taking on more facilities requirements, such as utility monitoring. This is leading the data center managers to be accountable for the power and its associated cost, which is resulting in far more review and investigation.”

As this trend progresses, Matusow predicts that more data centers will be looking for methods of reduction ranging from even more consolidation onto newer and more energy-efficient units (server and storage), the dynamic allocation of resources, and the increased use of sleep mode for workstations.

### Monitoring At A Deeper Level

Traditionally, power monitoring happened at the main electrical distribution boards in the electrical room. But thanks to the advancement of power usage effectiveness and data center infrastructure efficiency metrics, IT staff have increased their interest in power usage at the facility level. “Reporting of total critical UPS power consumed and total facilities power consumed have become a basic function of IT process reporting,” says Tate Cantrell, CTO of Verne Global ([www.verneglobal.com](http://www.verneglobal.com)).

That process reporting allows an IT group to keep track of its aggregate utilization over time, allowing CIOs to make strategic decisions regarding overall business impacts as load growth occurs within the data center.

“The new trends in power management focus on providing the CIO with a more granular view by moving the point of power measurement closer to the actual resources,” Cantrell says. “CIOs will come to expect full reporting of resource allocation and utilization at the application layer, the virtual machine layer, the server layer, the cabinet layer, and the cluster layer. As server manufacturers continue to provide and improve the accuracy of power monitoring of the power supplies as a standard option, server power will become the basis for these measurements.”

And, as the industry refines methodology and establishes standards for allocation of server power to virtual machines within a server, Cantrell adds, the CIO will be able to further refine his or her business model to the virtual layer.

### Keeping Cool

Cooling is another area to watch in the realm of power management, according to Randy Ortiz, director of data center design and engineering at Internap ([www.internap.com](http://www.internap.com)).

“Power densities are pushing the demand for cooling beyond the capabilities of even relatively new, like less than five-year-old, data center facilities,” Ortiz says. He adds that the use of outside air via air economizers has been a huge advance in the more

efficient design of data center cooling, which means a reduction in power demand. “With [a percentage] of a facility’s total power utilization being tied to cooling, small advances in efficiency here can provide big returns,” he says. “Simple things like white roofs, additional insulation, [and] ultrasonic humidification are all about lowering the demand for cooling and can pay off big on facility power efficiency and power usage effectiveness.”

Plus, adds Sungard’s Matusow, “The additional use of ambient air cooling and further isolation between hot and cold aisles will increase efficiency.”

### Trends Falling Out Of Popularity

As some power management technologies and methodologies wax, others will wane. One technology that observers see falling out of favor among designers is static switches downstream at the distribution level. “The problem with STSes (static transfer systems) is that they add an additional component to the electrical lineup that provides a single point of failure,” Ortiz says. “Given that most customers have dual-corded equipment, the need for an STS is less important. In addition, electrical designs are accomplishing the same results with better reliability than an STS can offer.”

Additionally, with CIOs having accurate power usage data at the server layer with power supply monitoring, some solutions that are often specified and constructed by the facility group will no longer be needed for accurate trending and reporting, predicts Cantrell. “One clear example is branch circuit monitoring within the main power panels,” he says. “While these systems can provide useful information to the facilities team, it [creates] duplicate effort and infrastructure if the CIO is using existing SNMP monitoring tools to continuously monitor server power consumption.”

## Key Trend: High Voltage On The Rise

Andy Szeto, senior product manager at Server Technology ([www.servertech.com](http://www.servertech.com)), says he’s seeing an increase in 240-volt/415-volt three-phase deployments. As companies build out or design new data centers, they’re going with this higher voltage for its power savings and increased capacity.

“There’s talk of going all the way up to 277V/480V, but only a few companies are prepared to address the design and safety issues that will arise from this type of power infrastructure,” Szeto says. “For those that are continuing with 208V, many are looking at going to 50 and 60 amps.”

Accordingly, Szeto says, 120V devices are falling out of favor in enterprise data centers.



# More U space for the dollar



Choose from 24U to 55U

- Open Frame Rack benefits include:**
- 55U, 50U, 44U, 36U, 30U, 24U sizes
  - Fits any server
  - Optimizes cooling and makes wiring easy
  - Dell, HP, IBM, Cisco compatible
  - 24U - 50U ships UPS ground
  - 3000 lb capacity
  - Vertical cable organizer
  - Optional side and top panels
  - Quick and easy assembly

- 55U benefits**
- Great for data centers
  - Uses the same square footage
  - \*while giving you 30% more space than a 42U model*

For more info on this product, see [www.racksolutions.com/rack](http://www.racksolutions.com/rack)



- Rack heights 24U - 55U**
- Universal square holes, cage nuts included
  - Streamlined support for power strips, PDUs

- New & improved design**
- 24" width is perfect for data centers
  - Flush floor mount spreads load on floor tiles

- Rack accessories**
- Rack tops, caster kits, side panels & power strips may be purchased separately



**We Design**

At RackSolutions, we pride ourselves on being an engineering driven company. With over a decade serving the data center market, we've developed product solutions for every major OEM. Better yet, our top notch staff of mechanical and electrical engineers are available to solve your toughest custom data center installation design challenges. Our customers like the fact that we often provide a first article prototype before competitors have even supplied a quote.



**We Build**

In order to meet our exacting production standards and rapid prototyping needs, we opened our own metal fabrication plant in 2005. Our engineers thrive on the fact that they can create a design in the morning and see a prototype from our own plant later the same day. We fabricate products from steel, galvalume, aluminum, Lexan and other flat sheet plastic materials. Our quality control process ensures we deliver only products that have met our own rigorous standards.



**We Ship**

Our 40,000 square foot warehouse, the centerpiece of our distribution capability, is located on our 13 acre campus together with our corporate office and manufacturing plant just outside of Dallas in Greenville, Texas. With complete pick, pack and ship capability, we process hundreds of parcel and freight orders daily. Our products are also available through Ingram Micro, the world's largest technology distributor and a leading technology sales, marketing and logistics company.

**1-888-903-RACK (7225)**

[www.racksolutions.com/rack](http://www.racksolutions.com/rack)

Reseller agreements - Volume agreements - Cage Code: 60QH5  
DUNS: 961816423 - Most POs accepted

Toll Free: (888) 903-7225 Fax: (903) 453-0808 Email: [info@racksolutions.com](mailto:info@racksolutions.com)

**PDU**s||direct

[pdusdirect.com](http://pdusdirect.com)



**Outfitting a Data Center?**  
We have an economical power solution for you.

Robust, economical power distribution solutions shipped within 24hrs – just 4-clicks away!

- COST EFFECTIVE**  
Buy at 10-20% below competing sites
- FAST SHIPPING**  
Products ship within 24-hours
- EASY-TO-USE WEBSITE**  
Transactions completed in 4-clicks
- INDUSTRIAL GRADE QUALITY**  
Highest quality PDUs on the market

**PDU**s||direct

Tel +1.888.751.7387  
Fax +1.775.284.2065  
[www.pdusdirect.com](http://www.pdusdirect.com)  
[sales@pdusdirect.com](mailto:sales@pdusdirect.com)

**Premium Quality PDUs without the Premium Price**



**Prepare For The Unexpected With Room Alert™**

No one knows when or how disaster will strike. We just know the potential is always there. So preparation is crucial to minimizing its impact on computers, networks, users & business.

When disasters occur, there are significant costs in areas that go far beyond the simple replacement of damaged hardware. This is because what happens in the data center or other facility effects the entire organization. If disaster strikes your facility, how will it impact business? Who will get the blame? Could it have been prevented? What will it cost?



**Room Alert** products can monitor:

- Temperature
- Humidity
- Heat Index
- Main / UPS Power
- Flood / Water
- Room Entry, Motion
- IP Network Cameras
- Smoke / Fire
- Air Flow
- Sound, Light
- Panic Buttons
- Dry Contacts
- Switch Sensors
- Wireless & More

AVTECH has a full line of powerful, scalable **Room Alert** solutions for real-time environment monitoring in a computer room, data center or other facility. All models arrive assembled with easy to install hardware, cables, sensors, easy-to-use logging & alerting software, printed documentation, unlimited technical support and a '30-Day Satisfaction Guarantee'. Users can typically install in under 10 minutes.

**Room Alert** products monitor critical environment conditions like temperature, power, humidity, flood, smoke, room entry, air flow, motion and more, alert staff by any method and can take automatic corrective action. There is a model that is right for any organization and budget... yours too!

**Call or Visit Us Online Today**

**AVTECH**

888.220.6700 • 401.628.1600  
[AVTECH.com](http://AVTECH.com)

**Protect Your IT Facility... Don't Wait Until It's Too Late!™**

\* AVTECH is the worldwide leader of IT & facilities environment monitoring products. Purchase online at [EnvironmentMonitor.com](http://EnvironmentMonitor.com). Reseller inquiries welcome.



Most Smartphone Users Not Brand Loyal

In general, smartphone users are not particularly loyal to any one brand of device. A German study indicates that smartphone users are likely to switch brands if they've found that their current smartphone lacks features they need or want. Only about 25% of smartphone users plan to stick with a specific operating system. The exception to that rule is Apple: iPhone users are much more loyal than most, with 59% indicating that they plan to stay with the iPhone. RIM is next on the loyalty scale, with 35% of BlackBerry users saying they'll stick with that device.

Gartner Revises PC Forecast Downward

Gartner reports that global PC shipments will finish at 352.4 million units this year, which is a strong 14.3% increase over 2009. For 2011, Gartner expects PC shipments to total 409 million, which is another healthy 15.9% rise. Despite the solid growth, these estimates are down slightly from the 17.9% and 18.1% growth Gartner had previously predicted. Gartner's more conservative revisions aren't due entirely to economic pressures—the popularity of Apple's iPad and other tablet devices have made an impact on PC shipments. Gartner's analysts expect media tablets to displace about 10% of PC units by 2014.



Company Admits To Importing Bogus Chips

Stephanie McCloskey of VisionTech Components plead guilty to charges of conspiracy, aiding, and abetting in a device counterfeiting scam where she, along with others, imported bogus circuits from China and Hong Kong and marketed them as "military-grade" products. Shannon Wren, owner of VisionTech Components, has also been charged with conspiracy, trafficking in counterfeit goods, and mail fraud. McCloskey co-signed bank accounts owned by Wren to illegally pay for personal items, including cars. McCloskey faces up to a \$250,000 fine and five years of incarceration. VisionTech Components sold fake chips—to the tune of \$15.8 million over three years—to several companies, including Raytheon Missile Systems, BAE Systems, and Northrop Grumman.

Seagate Ordered To Pay Former Employee \$1.9 Million

A federal jury in Minnesota has ordered Seagate to pay Chandramouli Vaidyanathan, a former Seagate employee, \$1.9 million as a result of a wrongful employment suit Vaidyanathan filed against the company. Vaidyanathan was originally seeking \$2.7 million in damages from Seagate, who he accused of hiring him under false pretenses. Vaidyanathan was hired in 2008 to work as a yield engineer for the company, prompting him to leave his job at Texas Instruments and move his family to Minnesota; however, upon arrival at Seagate, he found that the product he was hired to produce was still in the early stages of development and in fact never went to production, and Vaidyanathan was laid off nine months later. For its part, Seagate has declined to comment on the case and its outcome.

# Cloud Computing Trends To Watch

It's Shaping Up To Be A Private, Virtual & Hybrid Marketplace

by Chris A. MacKinnon

CLOUD COMPUTING MAY SEEM overhyped, but there's a good reason: It represents a new way to run IT, and that new way is very enticing. The new computing paradigm shifts IT costs from capital expenses to operational expenses, which rise and fall with usage. That shift enables a new type of flexibility, and the time it takes for a business idea to be delivered by IT drops dramatically. We've already witnessed cloud computing moving in a general direction, but what can we expect in the year ahead? Here are some of the upcoming cloud computing trends and technologies that are likely to shape the data center in the next 12 months.

The Hype

Tim Lozier, marketing manager with EtQ Management Consultants ([www.etq.com](http://www.etq.com)), believes cloud computing is gathering so much attention for good reason. "I think that, given how much hardware environments cost to maintain, the ability to put your solution in the cloud eliminates the headache of maintaining, upgrading, and monitoring an environment," Lozier says. "There are no concerns about hitting bandwidth or memory limits, and the cloud is able to fluctuate along with the amount of data that is hitting it. Plus, with the relatively low costs associated with cloud environments, solution providers can offer more features and functionality without worrying about backing up against the servers' capabilities."

While cloud computing represents a shift in technology, it does the same for the IT mindset. Michael Sheehan, technology evangelist for GoGrid ([www.gogrid.com](http://www.gogrid.com)), says that because IT services are delivered as operating expenditures, they are delivered on demand and in real time or near real time. "This allows for complex infrastructures to be created quickly and easily and be scaled up or down based on demand, usage, or other controls," he says. "The realized cost and technology efficiencies that the

cloud provides are making it a more viable alternative to self-hosting, company-owned data centers with racking and stacking servers that may sit around with minimal usage." He says companies are able to save money on their IT spend, deploying only what they need, when they need it.

What To Expect

According to Jay Fry, vice president of marketing for cloud computing at CA Technologies ([www.ca.com](http://www.ca.com)), the concept that will likely have the greatest impact on the data center over the next few years is the shift from thinking of IT as a factory to a supply chain. "A myriad of cloud services are becoming available," Fry says. "At the same time, IT is working to make its own internal systems more responsive and competitive. But business users have realized they can get a lot of their IT needs taken care of by going around IT completely and buying these outside services." However, that's a short-term fix, Fry says. That's because the rigor around security, management, compliance, and other topics that IT tries to maintain are still needed.

"So, the key trend is the evolution of the role of IT," Fry continues. "For smaller companies, it could shrink quite a bit. But in all cases, the role needs to morph into an orchestrator of services, evaluator of choices, and someone who has the capability to optimize how the business services are being delivered. That's a big job, obviously, and a big shift." He says as a result, it's also likely that IT pros will depend more and more on communities of cloud computing experts as trusted advisors and sources of the most useful information.

Many IT departments are being told to integrate and consolidate systems to streamline processes within the organization. Lozier says as this integration and consolidation trend grows, IT professionals are looking for options that will consolidate multiple systems. He explains, "Whether it is operating in the cloud or solutions that can consolidate key business functions, IT professionals are using more virtual environments to reduce their IT infrastructure overhead, looking for systems capable of executing multiple business functions, and systems that can integrate with their [existing systems from big-name vendors]."

Although the past few years were focused on simply defining what cloud computing is, Sheehan says now there are companies that are providing proven and true benefits from a technology and IT perspective. "There is still confusion by the general public as to what 'the cloud' is, and mainstream media is not helping with this, lumping anything that is stored on a server somewhere as 'in the cloud,' for example," Sheehan

Key Points

- A key trend to follow is the evolution of the role of the IT department into an orchestrator of services, evaluator of choices, and optimizer of how business services are being delivered.
- IT departments are being told to integrate and consolidate systems to streamline processes within the organization and will likely seek cloud solutions that will perform a number of duties.
- Enterprise departments will adopt more cloud computing technologies as they respond to cloud efficiencies. Expect to see more private clouds, virtual private clouds, and hybrid solutions coming to market.

says. "However, technical media and press now better understand the distinction between 'cloud' and 'cloud computing,' and the resulting services coming out and businesses serving these solutions are much more fine-tuned than in the past."

More Adoption

Sheehan says he believes there will be more adoption by the enterprise from a cloud computing perspective as departments and business units within these organizations move toward this newly realized efficiency. "We should see more private clouds, virtual private clouds, and hybrid solutions coming to market, as well as a few strategic acquisitions in the marketplace," he says.

Lozier says that at the end of the day, one of the key things that is more attractive about the cloud is that where once SaaS offerings were multitenant, the cloud now offers a single-tenant instance of the solution for the same cost. "So, rather than sharing an environment with multiple companies, cloud computing has enabled vendors to offer a single, personal enterprise environment for about the same cost," he says, adding that this eliminates any bandwidth, security, or data retrieval concerns for the customer and has been a huge selling point for enterprise software.

But change doesn't come without worries, says Fry, who explains that standard concerns such as security, compliance, and even organizational issues must be dealt with in new ways. "Large IT departments can become orchestrators of a supply chain of IT services, some services coming from inside their data centers and some coming from outside the company's four walls," Fry says. "Smaller companies may choose to forgo big investments in IT resources (infrastructure and expertise) or a data center altogether." ■

## Top Trend: Private Clouds

With the amount of Internet bandwidth and access available today, it's now feasible for companies to shift from buying and running expensive, dedicated computers, networks, and storage themselves to renting some or all of their computing needs "as a service" over the Internet instead. Jay Fry, vice president of marketing for cloud computing at CA Technologies ([www.ca.com](http://www.ca.com)), says that with cloud computing, you only pay for what you use, and you can add or subtract what you need on a minute-by-minute basis. "Larger organizations are also starting to apply these same concepts to their internal IT resources, creating private clouds that are much better at matching the resources that are needed to deliver on a given business need," Fry says.



# The Latest Security Developments

## End-To-End Protection & Cloud Security Are Among The Trends That Are Picking Up Steam

by Julie Knudson

THE STATISTICS COMPILED by the Identity Theft Resource Center are telling: Data breaches in 2010 have so far resulted in the potential exposure of more than 14 million records. This number is largely representative of the consumer market—personal and financial records comprise most of those 14 million—and doesn’t show the full impact of today’s corporate security breaches.

A survey published in November 2010 by Application Security revealed some possible factors behind the massive exposures recorded each year. Of the database managers

### Key Points

- As networks continue to intermingle and overlap, end-to-end data protection will become increasingly vital to an enterprise’s security strategy.
- Compliance mandates should be augmented by a risk management program.
- Pieces of the existing security infrastructure may no longer be viable against emerging threats.

surveyed, 39% indicated they lacked an understanding of security risks, while 25% felt they didn’t have sufficient security skills to successfully thwart current threats. Staying on top of what’s new in the security arena is key to preventing breaches and potentially catastrophic data loss. Following are some of the upcoming trends to watch for in the months and years to come.

### End-To-End Data Protection

Existing encryption and perimeter protection is increasingly being undermined by the greater reliance on and availability of alternate networks and access points. David Lowenstein, CEO of Federated Networks ([www.federatednetworks.com](http://www.federatednetworks.com)), says, “When most people think of end-to-end, it now basically encompasses the client across the network to the server. I think the end points need to be extended all the way to the data repository or end storage facility.”

Diana Kelley, partner at SecurityCurve ([www.securitycurve.com](http://www.securitycurve.com)), feels that the melding of known and unknown networks will continue to present new challenges to conventional encryption practices.

### Top Trend: Cloud Management Is Key

While the cloud is itself an evolving technology, new issues are on the horizon for those companies moving toward virtualization. A top concern is the security of data and applications whose control has been turned over to cloud providers and how liability will be determined if breaches occur.

David Lowenstein, CEO of Federated Networks ([www.federatednetworks.com](http://www.federatednetworks.com)), says that, “From my perspective, the theme will end up being data that’s encrypted before it gets to the cloud, so the cloud providers themselves don’t even have access to the data.” Data center managers should be as judicious with cloud security as if they were handling it themselves onsite, and hold their providers to a correspondingly high standard. Thom VanHorn, vice president of global marketing at Application Security ([www.appsecinc.com](http://www.appsecinc.com)), explains, “The bottom line is that, regardless if you’re in a virtualized or a physical environment, the same rules and requirements for database security exist.”

Determining liability for breaches of cloud-based data is still somewhat murky, but no one should assume they’re immune from risk. Diana Kelley, partner at SecurityCurve ([www.securitycurve.com](http://www.securitycurve.com)), says that the onus is on data center managers to ensure their cloud storage is managed at the right level. “It’s absolutely critical. You can’t just say, ‘I trust my provider, they’re going to be alright.’ You have to do your own due diligence and make sure that your provider is truly providing that level of protection and that they know what they’re doing.”

“Encrypting data as we go over untrusted networks, as we go over wireless . . . we don’t know half the time anymore,” she says. “Most of us have devices that are opportunistic for either cellular or Wi-Fi—most handhelds have the option of going to whichever network is cheaper and more available—so we’ve really started to give up the notion that we have control over the security of the network or the path that we’re taking.” Her solution is simple but solid: “Protect the heck out of the data that’s being passed over that network.”

### Internal vs. External Threats

Threat concerns seem to be cyclical, alternating between outside hackers and trusted insiders. Experts are currently seeing a strong focus on internal threats, from rogue employees to unscrupulous business partners with access to sensitive data.

Recognizing the risks posed by employees is sometimes difficult. As Kelley puts it, “There’s a psychological barrier that many of us have that says, ‘You’re my employee and I trust you.’ And we really do unfortunately need to get over that. It is the insider that actually has the better access.” Lowenstein points out that the conventional scenario involving a single rogue employee isn’t the only threat to consider. “It’s easy for malicious players to leverage one piece of data to try and get another piece of data, or have one user that’s lower on the totem pole try to ensnare a higher-ranking person with more access to data,” he says.

Setting and maintaining appropriate access levels is a primary concern when considering internal threats. Thom VanHorn, vice president of global marketing at Application Security ([www.appsecinc.com](http://www.appsecinc.com)), stresses the need for good access management, saying, “So many breaches are perpetrated by insiders and people that have access to data that you need to make sure that an employee only has access to the information necessary to do their job.”

### Compliance Isn’t Security

Compliance will heavily impact data center managers for the foreseeable future—not just in mandates and regulations, but in the potential security lapses that result from viewing such requirements as exhaustive. According to VanHorn, “A lot of the purchases of solutions for data security have been driven by compliance requirements.”

However, he’s also quick to highlight where compliance ends. “I think finally there’s becoming an understanding that compliance doesn’t equate to security.”

Kelley agrees and says data managers can balance compliance and security. “I’d like to see more risk management,” she says. “To really be secure, we need to have a little beyond just the compliance checkboxes.” She suggests that data center managers have in their arsenal a strong risk assessment program, along with a foundation of best practices, to prevent them from bumping up against compliance mandates.

VanHorn notes that compliance isn’t a one-time event. “There’s an understanding emerging that you have to have continuous compliance, so you need automated systems that continue to monitor and assess and keep you compliant 24/7/365,” he says. To meet this

need, he recommends a comprehensive program of ongoing management and monitoring.

### Fix The Foundation

Data center managers are finding they can no longer expect existing technologies to keep pace with evolving security threats and emerging solutions. Even tools once considered security staples are beginning to show their age.

Lowenstein advises SMEs to revisit conventional wisdom. “If we’re in fact going to be able to move forward effectively, I think some older notions have to fall by the wayside to make progress,” he says. “When you look at current important building blocks like the operating system or the browser . . . to think that those mechanisms are now going to be able to be made secure I think is both naïve and misguided.”

AMPS

888

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

CYBER@SWITCHING®

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

0

1

2

3

4

5

6

7

8

9

DUALCOMPLUS

ROBUST FEATURES AT A GREAT VALUE

Ethernet-based Remote Management

Individual Outlet Current Metering and Control

Cyber Breaker® the Virtual Circuit Breaker™

Contact: [sales@cyberswitching.com](mailto:sales@cyberswitching.com) or 888.311.6277 to place your order or for more information

CYBER@SWITCHING®

Starting at \$599

DUALCOM PLUS

CYBER@SWITCHING®

www.cyberswitching.com 888.436.9830



## Study: Cloud Computing Reduces Carbon Emissions

Using the cloud may not just save your company time and money, it might also help save the environment, according to a recent study funded by Microsoft and conducted by Accenture.

The study, “Cloud Computing and Sustainability: The Environmental Benefits of Moving to the Cloud,” concludes that using cloud-based tools and services is much more efficient than using your own infrastructure. One of the study’s authors, Andri Kofmehl, a manager with Accenture Management Consulting, notes that in a comparison of cloud-based and on-premises deployments of major business applications, choosing the cloud can result in energy and carbon savings of 30 to 90%. The savings depend heavily on the size of the company and, perhaps counterintuitively, the smaller the organization, the more it stands to gain by utilizing cloud-based resources.

It boils down to efficiency. “Much like commuting by mass transit reduces emissions compared to using an individual vehicle, the cloud is able to deliver a service more efficiently across multiple organizations than what dedicated equipment can do for a single organization,” Kofmehl says.

The study looked at Microsoft’s own data centers, comparing several commonly used Microsoft applications for which there exist both cloud-based and standard versions, but the company notes that similar advantages can be observed with just about any cloud-based applications and service providers.

“The study takes a holistic view at the efficiency of the cloud by looking at the aggregate footprint of an application user and not just data center efficiency metrics,” Kofmehl says. “In collaboration with Microsoft, we were able to put hard numbers to the cloud’s benefits and validate them with one of Microsoft’s enterprise customers.”

### Less Environmental Impact

The report points to four specific factors that contribute to the increased efficiency: dynamic provisioning, multi-tenancy, server utilization, and data center efficiency.

So what does that efficiency mean to data center and IT managers? According to the report, doing business in the cloud can be a way to decrease the drain on company resources while adding to the bottom line and reducing your company’s carbon footprint. “Moving to the cloud is a way to outsource IT efficiency efforts,” Kofmehl says. “In addition to moving to the cloud for cost savings and increased agility, IT and business leaders can consider cloud computing as a part of their corporate sustainability strategy.”

by Rod Scher

# Data Center Layout & Design Trends

The Cooler, Greener Data Center Is On Its Way

by Cynthia Harvey

IN UNCERTAIN ECONOMIC TIMES, companies put data center upgrades on hold. But now that the Great Recession appears to be ending, enterprises are turning their attention back to their aging IT infrastructures.

Earlier this year, Digital Realty Trust found that 83% of enterprises surveyed were planning data center expansions within 12 to 24 months. Confirming those findings, IDC reported in November that the worldwide revenue for data center infrastructure equipment climbed 6.9% during the second quarter.

As they expand their facilities, companies are keeping a close eye on the bottom line, adopting technologies and techniques that promise to make data centers more

future when you grow, you can grow into it,” Broderick explains. That’s the technique employed by IBM’s recently completed flagship data center located in Raleigh, N.C.

Other models, such as HP’s “butterfly” concept data center, achieve modularity by closing off portions of a large building for use later. And some data centers, notably Microsoft’s Azure facility, utilize actual data center modules that are the size of standard shipping containers. What all these approaches share is unutilized capacity available for future growth and a plan to grow in set increments.

“The need for IT is going to continue to grow,” Molloy adds, “but if we built now what we anticipate needing, we would waste it.”

### Going Green

That drive to reduce waste is also pushing a trend toward more environmentally friendly data centers. “Green IT is as much about the economics as it is about the environment,” Molloy says.

In particular, companies are working to reduce their energy consumption. According to researchers at Gartner, energy costs currently account for 12% of data center expenditures, and that percentage is rising fast.

In order to cope, companies are investing in new cooling technologies and installing energy-efficient hardware. “The biggest benefit that

you can get, from an energy efficiency standpoint, is put in hardware that’s efficient,” Alger says. “Every watt of power that doesn’t have to be consumed by the hardware relative to what it’s doing, your mechanical and electrical systems work a lot less. It’s about a 3:1 savings ratio.”

In addition, Alger also recommends that companies install low-profile fluorescent or LED lighting, use fiber instead of copper cabling, and keep things neat and tidy to improve airflow. “The little tiny things we do can add up over the life span of the data center,” he says.

### Integrating The Physical & The Virtual

In the future, integration between IT management and the management of the physical facilities could bring new opportunities to reduce energy costs. At IBM’s Raleigh facility, for example, the company installed more than 2,000 sensors that generate a heat map of the facility. Thanks to cloud computing and virtualization, IT managers can move workloads around in order to deal with hot spots in the facility.

Although cutting-edge technology like this may be out of reach for smaller data centers, many of which are just beginning their virtualization initiatives, it could eventually pave the way for future data centers that are even more energy efficient and less expensive to operate. ■

### Key Points

- Data center upgrades, expansion, and new construction are on the rise once again.
- Enterprises are using consolidation, modular designs, and energy-efficient technology to reduce their expenses as they upgrade their facilities.
- Air-side and water-side economizers, hot aisle/cold aisle techniques, and rear-door heat exchangers are helping companies lower their cooling costs.

efficient. Key trends include consolidation, modular layouts, and green technologies that reduce energy costs.

### Two Levels Of Consolidation

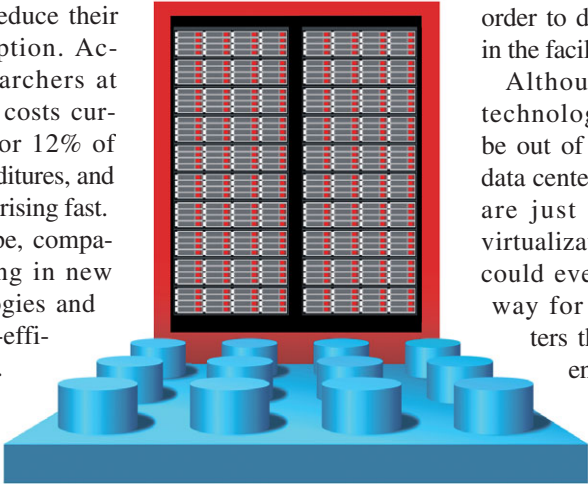
Data center consolidation is occurring on both a macro and a micro level. Katherine Broderick, senior research analyst at IDC, reports that enterprises with 500 to 1,000 employees or more, which tend to have multiple facilities, are merging their existing data centers. By consolidating into fewer data centers with more square footage per facility, these organizations find it easier to manage their infrastructure.

On a smaller scale, consolidation is also occurring within the data center as hardware becomes denser and workloads are concentrated onto fewer servers. Virtualization and cloud computing are contributing to this effect, says Douglas Alger, IT architect at Cisco Systems (www.cisco.com) and author of “Grow a Greener Data Center.” In a cloud environment, “You don’t have 20 boxes each 10% loaded—you have two boxes that are pretty close to fully loaded.”

### A Modular Approach To Growth

According to Chris Malloy, IBM distinguished engineer and facility management specialist, “Modularity is probably one of the key technologies and key foundations of architecture for future data centers.”

But “modularity” encompasses a lot of different techniques. “[It] can take the form of larger pipes in the building, meaning more power and cooling capacity than you actually need at the time, so that in the



## Top Trend: Keeping Things Cool

For the past several years, data center designers have worked hard to find better ways to cool the data center. Chris Malloy, IBM distinguished engineer and facility management specialist, notes that in the past, “Two-thirds of the energy that came into a data center never reached a piece of IT equipment because more energy was spent cooling the equipment than was spent powering the equipment.”

To combat the problem, companies are locating new data centers in areas where they can install economizers that use outside air to help cool the facility, at least part of the time. “We haven’t necessarily built any data centers in Greenland, but a lot of companies have shopped around in those areas,” says Douglas Alger, IT architect at Cisco Systems (www.cisco.com). He points out that his company’s data center in Texas is able to use economizers about 50% of the time, even though Texas isn’t a particularly cool climate.

To help cool individual rows and racks, enterprises are using hot aisle/cold aisle techniques to keep hot and cold airflows separated. “Some folks have been taking it a step even beyond that so you can enclose the cabinets with a chimney system and then vent the hot air into an enclosed space in the plenum up above,” Alger says.

At its facility in Raleigh, N.C., IBM has installed rear-door heat exchangers, which circulate water near the back of server racks. According to Molloy, with this technology, “the air coming out of the radiator is actually colder than room temperature, so it actually contributes to cooling the room in addition to cooling that rack.”



# Short On Time?

Why navigate through countless Web sites when you can get all the information you need in just a few minutes by reading *Processor*! *Processor's* content is comprehensive, but it's presented in a quick, easy-to-read format, so you can keep up with the constant flood of new data center products and technologies.



**PROCESSOR**  
Products, News & Information Data Center Cdn. Tech. Since 1979

**When Space Becomes**

For more information call 800.819.9014 or go to [www.processor.com](http://www.processor.com)

## DATA CENTER DEPOT

A Gaw Associates, Inc. Company

Toll Free: 877-GAW-RACK • [DataCenterDepot.com](http://DataCenterDepot.com)  
(429-7225)

We are an industry leader, nationally recognized for the highest quality products and services, as well as most economical solutions.



Standard & Seismic racks



Rack accessories



Technical furniture



Adjustable height tables



Wall mount racks



Rack mount travel case

Made in the USA

Numbers speak for themselves!

Customer satisfaction	97.5%
On-time delivery	95.3%
Quality	99.0%

Source: ISO/TL 9000 Certification Data

- Cable ladders
- Cable management
- Custom manufactured racks and accessories
- Design solutions and free expert consulting
- Rack and stack

Call us today, receive answers today: 877-429-7225  
Give us 1% of your business . . . we'll earn the rest!



## Processor Showcase

The *Processor* Showcase provides a quick glimpse of data center products available from some of the industry's leading manufacturers. Each Showcase provides information on the product's most important features, complete with a product photo, to simplify your buying process.

Product manufacturers and resellers:  
To list your products, call (800) 247-4880.

### PHYSICAL INFRASTRUCTURE

#### Snake Tray® Cable Management & Power Distribution

Designed To Reduce Construction Costs!



- Cable Management**
  - Built-in mounting hardware
  - Integrates with access floor or mounts directly to the subfloor
- Power Distribution**
  - Modular energy-efficient bus bar technology
  - Power and data distribution boxes



Snake Tray  
(800) 308-6788  
[www.snaketray.com](http://www.snaketray.com)

### PHYSICAL INFRASTRUCTURE

#### TEMPERATURE@LERT

**\$129.99**  
Free Shipping



- Notifies You Via Email Of Changes In Room Temperature
- Runs On All Windows Platforms
- Logs To TXT, Temperature Graph, Event Log, and XML
- Runs As A Windows Service
- SNMP Support
- Free Shipping


**TEMPERATURE@LERT®**  
USB TEMPERATURE MONITOR WITH EMAIL ALERTS  
Temperature@lert  
(866) 524-3540  
[www.temperaturealert.com](http://www.temperaturealert.com)

### PHYSICAL INFRASTRUCTURE

#### CW-24V5 Sentry Switched CDU

Mixed Outlet 3-Phase 415V/240V

- Achieve greater efficiencies by bringing 3-Phase 415V to the cabinet and 240V to the devices
- Single-power input feed; 24 outlets per enclosure
- Delivers up to 21.6kW
- Remote power management
- IP access and security
- SNMP traps and email alerts
- Environmental monitoring
- Ability to add an expansion module



Server Technology Inc.  
(800) 835-1515  
[www.servertech.com/products](http://www.servertech.com/products)

### PHYSICAL INFRASTRUCTURE

#### CS-2HD2/HDE Smart Power Monitor

- Easily add input current load and power monitoring to any existing cabinet
- Quickly added to SAN's or other cabinets that do not have any power monitoring capabilities
- Measure aggregate current draw on each power circuit
- IP access and security/Environmental monitoring
- Provides automated SNMP-based alarms or email alerts



Server Technology Inc.  
(800) 835-1515  
[www.servertech.com](http://www.servertech.com)

### PHYSICAL INFRASTRUCTURE

#### CS-3AVY Sentry Smart CDU

Provides reliable 3-Phase power distribution. Multiple outlet types distribute multiple voltages via 3-Phase 208V Wye power in-feed.

- High Density
- Multiple Voltage Outputs
- Input Current Monitor
- IP Access & Security
- SNMP Traps
- Environmental (Temperature & Humidity) Monitoring
- Branch Circuit Protection
- **NEW!** Linking for Smart CDU (Expansion Modules)



Server Technology Inc.  
(800) 835-1515  
[www.servertech.com](http://www.servertech.com)



# Earthquake Zone Or Tornado Alley?

Facing Up To Data Center Site Location Risks

by Bridget Mintz Testa

ALTHOUGH HUMAN ERROR is the No. 1 cause of data center downtime, you can't ignore natural disasters. Where your data center is located dictates the types of disasters your enterprise could face. According to the Uptime Institute's new "Operational Sustainability" standard, which is complementary to the well-known Tier standard, it's crucial to evaluate the potential risks of a site. Yet that evaluation can be overlooked, even by the most conscientious of enterprises and planners. Without it, a data center operations team won't be trained or equipped to deal with the inevitable disasters.

### Assessing The Risks Of Data Center Site Locations

"If you put your data center in Tulsa, Okla., a tornado is in your future," says Julian Kudritzki, vice president of the Uptime Institute. Such a statement raises an immediate question: Why would anyone place a data

### Key Points

- Regardless of whether a data center project planning team has input regarding a facilities location, the team must still perform a risk assessment of the location.
- A site risk assessment must be signed off on by the enterprise, especially by top management, so everyone knows the risks.
- Disaster prevention and mitigation success depends on support team training and whether team members have the proper equipment.

center in a location known for tornadoes or hurricanes or floods or earthquakes . . . or any of the variety of natural disasters that can happen? "Any site will be prone to some sort of disaster," says Kenneth Wolverton, vice president of data center operations for managed hosting, managed

services, and colocation provider Cyrus-One ([www.cyrusone.com](http://www.cyrusone.com)).

If we accept that finding a perfect, disaster-proof site isn't possible, the Uptime Institute's new "Operational Sustainability" standard says that a risk assessment for local and regional natural disasters must be conducted. Although this seems obvious, it can be more difficult than you might think.

"Not thinking about site location is very common," Kudritzki says. "Project teams focus on what's inside the building."

Indeed, a site may have already been selected because the company already owns the land, or the land is a good buy, or it's convenient or for any number of reasons that have nothing to do with data center uptime. If a data center project team has no input into site selection, that doesn't mean it should ignore the risks of potential disasters.

"One of the first things a team should do is run through a comprehensive site location risk matrix so all the risks are recognized and signed off on by everyone, especially top management," Kudritzki says. "This protects the data center project and operations teams from punitive actions by the organization. It's incumbent on the data center project team to make everyone aware of the risks."

If a site hasn't been chosen, but the data center project team assumes that an in-house or contract real estate specialist has it under control, "that's a bad assumption," Kudritzki says. "Real estate people may never do a risk assessment. They may not even think about it. If they do think about it, they likely think of the data center as if it were an office building." The floor loads, power, and cooling demands of a data center are emphatically different from those of an office building.

If your enterprise is planning to colocate a data center, don't assume the colocation provider has considered all the risks. "Whether you build your own data center or colocate, look at whether or not a site is outside of a flood plain," Wolverton says. "Look at the colo plan, look at the equipment and materials they have onsite to deal with disasters. Look at the training their people have. Ask how they will operate on a day-to-day basis and how they will operate in a disaster. If a colocation provider can't answer all these questions satisfactorily, I'd be wary."

### Prevent & Mitigate Site Location Risks

A power outage is the most common cause of downtime a data center can experience. Whether the outage is considered a disaster depends on how prepared your operations and disaster recovery teams are. "For a power outage, you want to make sure you have a battery backup and a secondary power source," Wolverton explains. Depending on your setup, battery backups may have to last anywhere from 15 to 45 seconds to 10 to 15 minutes.

When it comes to secondary power, "almost all of our generators have 2n redundancy," Wolverton says. "The most typical backup strategy is N + 1. If a colocation provider doesn't have at least N + 1, how can they call themselves a data center? Utility power will go out."

Having N+1 or 2n or even 3n backup generators won't do a lot of good if they run out of fuel. "Outsize your bulk diesel storage," Kudritzki says. "If you have a contract with a diesel fuel provider, it does you no good if the roads are iced over or flooded."

Floods can cause water damage, but they are hardly the only source. "With a hurricane, wind blows water horizontally. So water comes in through doorways and walls, and the roof will leak," Wolverton says. "It's not a matter of if it will happen. It's a matter of what you'll do about it."

Water damage can be much worse than a power outage. Losing power may cause you to shut down your data center, but water damage can destroy it.

To prevent water damage, Wolverton advises installing a detection system wherever there's a risk of water leakage; that way you'll know about the water before it's a problem. "You might spend a lot of time looking at false alarms, but it's better to be safe than sorry," he adds.

"The most important thing is a set of leak diverter blankets and an on-site staff trained to set them up," Wolverton explains. These are thick vinyl plastic "blankets" (ranging in size from 2 x 2 feet to 15 x 15 feet) attached in the middle to a hose which drains water to a bucket or some other receptacle.

Whether you're building or colocating a data center, think about the risks of disasters and how you'll deal with them. "The site location is the only thing you can never change about a data center," Kudritzki says.

## Data Center Backups

When considering data center locations, disasters, and how to deal with them, an ideal solution is a second or backup facility. The most common question about backups is their ideal distance from the primary facility. "There is no distance requirement per se," says John Morency, CISA, research vice president for Gartner Research. "The distance is a function of the disaster profile. In the Midwest, it's 10 to 25 miles. In the Gulf Coast, it's 150 to 200 miles."

Another important factor in backup site selection is the location of the support team. "Organizations do favor a location within one and a half hours so the support team doesn't need to choose between their families and the business," Morency says.

# Right Here!

## All In A No-Nonsense Format

Product Overviews • Information Columnists  
Leading Manufacturers • Technology News & Information



## Don't Miss A Single Issue.

Call 800.819.9014 or go to [www.processor.com](http://www.processor.com)



BUYING GUIDE



BUYING TIPS:  
Fire Protection

by Nathan Lake

**YOU ALREADY HAVE** a lot on your plate if you're in charge of protecting the data center. Hackers, hardware and software failures, and changes to the physical infrastructure are all concerns. Fire protection is one issue that probably isn't on top of your list, but if your data center isn't capable of suppressing fires, all the rest of your hard work may be for naught. Here, we'll examine what key features you should look for when investing in data center fire protection.

**Alert options.** You'll need to invest in a smoke and fire detection system that can alert employees and IT staff to problems. Some models are capable of detecting the various stages of a fire, such as visible smoke vs. flaming fire vs. intense heat, to allow you to set off alarms or activate various stages of fire protection.

Regardless of which type of suppressant is selected, you'll need to know at what

stage during a fire the detection system should trigger the release. According to Steve Joseph, director of marketing development for Xtralis ([www.xtralis.com](http://www.xtralis.com)), "Unnecessary or poorly timed suppression


Buyers' Checklist

- ✓ Find a smoke/fire detection system that meets the needs of your data center, in terms of stages of fire protection and number of physical detection locations.
- ✓ Research the various clean agent suppression options and make sure your sprinkler system is capable of working with the clean agent suppression system.
- ✓ Invest in an emergency power off system to shut off electricity when a fire is detected.

dumps must be avoided since the cost of such mistakes is enormous, because a volume of clean agent sufficient for even a modestly sized area can cost tens of thousands of dollars to replace." In short, effective detection is key, as the suppression system is only as good as the detection system initiating the release.

**Suppression options.** Fire protection is generally broken down into water and non-water options. The obvious downside to using a sprinkler system is that electronic devices and water can be a bad combination, especially in situations that are started by electrical fires. Thus, most data centers opt to go with a clean agent suppression system, which is designed to leave no residue and is safe for both electronics and people, unlike some chemical-based fire protection.

"Some clean agent suppressants are complex chemical compounds which act on the fire in various ways, such as reducing the heat, while others are pure inert gases which displace the oxygen to inhibit combustion," Joseph says.

**Emergency power off.** Nearly all data centers also install an EPO (emergency power off) system, which will shut off any electricity to the area where the detector senses a fire. Look for models with industrial-grade contactors, heavy-duty relays, and hard-piped wiring to prevent any accidental shut-offs. The EPO will need to be able to automatically work with your fire detection system. 

Key Terms

- Agent storage container.** The assembly or unit that stores the clean agent fire suppression liquid until it needs to be released when prompted by the suppression control panel.
- Class C.** Fire breakouts that involve electrical equipment where a non-conductive extinguishing agent must be used.
- Clean agent.** A type of fire suppression system that leaves no traces behind and won't damage electronic equipment.
- Deluge.** A system where all the sprinklers connected to the water piping system are open. If the deluge valve opens due to a signal from the fire alarm system, the entire area will be sprayed with water.
- Early warning smoke detector.** A passive detector that uses ionization and photoelectric sensors.
- Heat detector.** A unit that sends a response when the convection of thermal energy changes the temperature of the device's heat-sensitive element.
- Suppression control panel.** The unit that houses the interface you use to control the fire protection system, including managing the smoke and fire detection systems and report alerts or sound alarms.
- Very early warning smoke detector.** A type of smoke detector that actively samples air particles via aspiration to find non-visible smoke.

CONTAINMENT UNDER  
SPRINKLER HEADS?  
NO PROBLEM.

POLARPLEX DROP AWAY PANELS™

Clear, fire safe, UL listed. Exclusively from Polargy.

A brand new hot and cold aisle containment solution that is approved by fire safety officials for use below lighting and fire suppression systems.





# Fire Protection

Product

Advanced Fire Protection Systems Fire Alarm Systems




Description

AFPS (Advanced Fire Protection Systems) has been installing state-of-the-art fire alarms for years, and the models are often integrated with access control, CCTV, and security management systems. AFPS also offers a variety of services and capabilities to span your fire system's entire lifecycle.

- Consultation and design
- Turnkey project management
- Installation
- Certification and operator training
- Inspection and preventive maintenance
- Central station monitoring

**Best For:** Enterprises looking for a company that can handle the end-to-end installation and maintenance of fire protection.

Ansul Sapphire Fire Suppression System



Description

Ansul's Sapphire Fire Suppression System is a fixed-nozzle system that uses 3M's Novec 1230 fire protection fluid to quickly quell fires without causing harm to sensitive equipment, people, or the environment. The Novec 1230 is stored in cylinders in a fluid form, and upon discharge, it instantly vaporizes as it absorbs heat to protect spaces. Every Sapphire system is custom-engineered for the specific application using the most effective and efficient arrangement of storage, actuation, distribution, and discharge components.

- Meets NFPA 2001, so it's safe for occupied spaces
- Capable of automatic detection and actuation or remote manual activation
- Effective on class A, B, and C fires
- Meets UL/ULC, FM, and other international approvals
- Zero ozone depletion

**Best For:** Areas where an electrically non-conductive medium is required, as well as environments where electronic systems cannot be shut down in an emergency.

Fike SigniFire IP Video Flame & Smoke Detection Camera




Description

The SigniFire IP represents a family of turnkey flame, smoke, and intrusion detection camera solutions that visually detect the presence of fire or smoke at its source, independent of airflow in the area. This technology offers a critical advantage for early warning fire detection, identifying and reacting to fire, and protecting lives and property.

- Detects flame in seconds
- Supplies vital, situational, live video to remote locations
- Provides video surveillance capabilities
- Triggers fire alarm systems
- Provides prerecorded video forensic evidence for future fire investigations

**Best For:** Enterprises looking to identify smoke in large spaces and have video evidence for insurance purposes.

Marioff HI-FOG Water Mist Fire Protection System




Description

The HI-FOG system from Marioff discharges a fine water mist at high velocity to suppress and extinguish fire. This setup can be used in place of deluge, gas, foam, dry chemical, traditional sprinkler, and other types of fixed fire protection. HI-FOG uses up to 90% less water than a conventional sprinkler system, which means cleanup is fast and business downtime is kept to a minimum. Fire, water, heat, and smoke damage are minimized, as well, and it stops the fire from spreading or reigniting. A typical HI-FOG system in a data center consists of a high-pressure pump unit, a small water supply tank, section valves, small-diameter stainless steel tubing, and HI-FOG sprayheads.

- Uses a three-prong approach: cooling, radiant heat blocking, and local oxygen inerting
- Offers total facility fire protection to simplify maintenance and deliver cost savings
- Minimizes business disruption because system discharge is localized at only the point of the fire
- Use of various system configuration points minimizes risk of leakage and false discharges
- Spaces will not need to be evacuated or closed off for HI-FOG to be activated
- Can be easily expanded to new phases of a data center facility
- Supports environmentally sustainable design

**Best For:** Organizations that want a system that covers all of their fire protection needs

Periphman Aero-K




Description

Periphman's Aero-K fire suppression system uses potassium-based aerosol generators that can extinguish a fire in seconds. The aerosol won't harm electronics or electronic media such as tapes and disks or the health of facility personnel. Aero-K aerosol generators are compact and easy to install and feature multiple smoke detectors that limit the chance of accidental discharge.

- Won't corrode steel, plastic, nickel, brass, zinc, copper, aluminum, or other commonly used composites
- Leaves little residue after venting
- Ecologically friendly with no agents that can harm the ozone layer
- Control panel with battery backup in case of power outage

**Best For:** Information technology and telecommunications industries.

Polargy PolarPlex Drop Away Panels



Description

One of the big challenges with air management products is maintaining data center fire safety without sacrificing visibility in the aisles. Polargy's PolarPlex Drop Away Panel addresses those challenges. The panels are the only ones on the market with a UL listing for use under sprinkler heads. With an activation temperature of 135 degrees Fahrenheit, the panels fall to the floor in the event of a fire, so the ceiling-based fire suppression system can operate free of obstructions.

- Custom made to order
- Lightweight and easy to install (a 2- x 4-foot panel weighs only 7 pounds)
- Panel insert material is a special transparent plastic, allowing light to pass through
- Each panel is 0.013 inches thick and slots into an extruded 1-inch anodized aluminum frame

**Best For:** Data centers that need to seal the top of a hot or cold aisle while still allowing a fire suppression system to work as needed.

**Contact:** (888) 816-8338  
www.polargy.com/PolarPlexDropAwayPanels



Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Nathan Lake

## Fireaway Stat-X Thermal Units



Stat-X Thermal Units from Fireaway emit an ultra-fine potassium-based aerosol that won't harm sensitive electronic equipment or magnetic media. Thermally operated units integrate a thermal detector that automatically activates the unit in the event of a fire. Thermal units can also be manually activated. Thermally operated units have a low installation cost, are virtually maintenance-free, and have a shelf life of more than 10 years.

- Easy installation that doesn't require pressure vessels, piping, or installation manpower
- Occupies less space than other extinguishing agents
- Environmentally friendly with zero ozone depletion potential
- Favorably reviewed by EPA for SNAP listing

**Best For:** Electronic cabinets, data processing equipment, and printing equipment.

## Firelock Modular Server Vaulting



With Firelock's Modular Server Vaulting, you get a custom-designed vault that's built to suit your needs. A Firelock modular vault is an enclosure with integrated environmental monitors and fire suppression components, which makes it easier to protect the contents from a fire on the outside. The vaults protect your valuable components from fire while you monitor the servers and equipment from a remote location.

- Class 125 four-hour rated vault door
- Smoke- and heat-activated hydraulic door closer
- Environmental/alarm monitoring
- CCTV surveillance
- Novec 1230 fire suppression
- Watershield roof deck
- Fire-rated electrical cable trays
- Master power switch

**Best For:** Enterprises that want to ensure mission-critical operations by protecting key equipment in an isolated, secure, and fire-protected area.

## FireXonline OnGard



The OnGard fire protection system from FireXonline consists primarily of a tank filled with fire-suppressing agent. A tube connected to the tank delivers the suppression agent directly to a potential fire site, such as the inside of a rack enclosure. When a fire is detected, the tube will rupture and release the agent into the area. Extinguishing a fire at the source may eliminate the need to discharge a computer room's larger suppression system.

- Penetrates hard-to-reach areas
- Detects and extinguishes fires in less than 10 seconds
- Reduces downtime caused by data center fire

**Best For:** Data centers, computer rooms, and communications facilities.

## TechXact Fire Prevention System



TechXact's Fire Prevention System actively prevents a fire from starting by controlling the oxygen content of the room. The reduction is precise enough that there's not enough oxygen for a fire to start, but enough that people can enter the room and stay without any side effects. The oxygen reduction is aided by nitrogen, which can be generated in a cost-effective manner onsite or using an air processing system.

- Provides certainty of avoiding outbreak and spread of fire
- Permanent and preventive fire protection to secure business processes and valuable goods
- Avoidance of further damage from smoke, spread of fire, or extinguishing agents
- Problem-free adaptability to changes in fire risk
- Cost savings at the construction stage of fire detection measures
- Personnel retain access to protected areas

**Best For:** Environments where availability is the top concern or situations where a fire risk must absolutely be eliminated.

## Victaulic Vortex



The Victaulic Vortex fire suppression system is the world's first-ever hybrid (water and inert gas) fire extinguishing system that extinguishes fires without the use of any toxic chemicals by deploying a high-velocity, low-pressure mixture of nitrogen and water. The system delivers as little as one gallon of water per emitter per minute, and each emitter can protect up to 2,500 cubic feet. The system is compatible with facility fire protection systems to provide greater design flexibility, and it is recharged rapidly allowing for a return to working conditions almost immediately after a fire.

- Nearly zero wetting of protected areas
- No ozone depleting or greenhouse gas emissions
- Quick system recharge to support minimal facility downtime
- Protects people and assets

**Best For:** Protection of enclosed cabinets and isolated equipment within protected spaces.

## Xtralis VESDA ASDs






VESDA early warning ASD (aspirating smoke detection) solutions from Xtralis provide continuous air sampling to give you the earliest possible warning of an impending fire. VESDA ASDs buy time to investigate an alarm and initiate an appropriate response to prevent injury, property damage, or business disruption. VESDA detectors have multilevel warnings and a wide range of sensitivity that does not degrade or change over time, so even minute levels of smoke can be detected before a fire has time to escalate. VESDA ASDs come in a variety of models to provide early warning smoke detection for a broad range of applications and environments of different sizes—from data centers to large, open spaces and even harsh environments.

- VESDA sampling points can be placed at the return air grill or inside equipment cabinets to detect smoke as it is carried by the air
- Detectors can also be mounted in accessible locations for easy maintenance
- Dual-stage filtration ensures that detectors function reliably in extreme conditions and dirty environments
- Allows for early intervention to prevent suppression releases

**Best For:** Areas in which smoke is difficult to detect, such as in a server room.



# Power Distribution Units

Product	CyberPower PDU15SW8RNET	CyberPower PDU20MV20F	CyberPower PDU30BHVT10R
			
Description	<p>The CyberPower PDU15SW8RNET is an eight-outlet rack-mount networked PDU made of rugged, industrial-grade metal. It provides 120V 15A output. From a single NEMA 5-15P input, it delivers an unfiltered electrical pass-through current to eight NEMA 5-15R receptacles. The PDU15-SW8RNET provides a network connection through an RJ-45 Ethernet port and offers remote management.</p> <ul style="list-style-type: none"><li>LCD screen provides real-time load monitoring measured in amps</li><li>10-foot AC power cord included</li><li>Can be mounted horizontally or vertically</li></ul> <p><b>Best For:</b> Organizations looking for a rugged, industrial-grade switched PDU.</p> <p><b>Price:</b> \$595.95</p>	<p>The 20-outlet CyberPower PDU20MV20F 0U vertical rack-mounted metered PDU can support 20 NEMA 5-20R receptacles with unfiltered electrical pass-through, and the LCD screen offers real-time load monitoring measured in amps. With an industrial-grade metal exterior, the PDU20MV20F offers a rugged design and can be mounted horizontally, vertically, or on the wall.</p> <ul style="list-style-type: none"><li>20-amp electrical capacity with a circuit breaker</li><li>10-foot AC power cord and cord retention tray included</li><li>ETL/RoHS-certified</li></ul> <p><b>Best For:</b> Data centers in need of a flexible and rugged metered PDU.</p> <p><b>Price:</b> \$198.95</p>	<p>The CyberPower PDU30BHVT10R is a rackmount basic PDU with 10 outlets that offer 200V/230V 30A output and deliver unfiltered electrical pass-through power to 10 IEC-320 (two C19/8-C13) receptacles from a NEMA L6-30P twist-lock plug. The industrial-grade metal housing provides a rugged exterior, and it includes a 10-foot AC power cord. The PDU30BHVT10R can be mounted horizontally and vertically, and it comes with a lifetime warranty for defects in design, assembly, material, and workmanship.</p> <ul style="list-style-type: none"><li>30-amp electrical capacity with a circuit breaker</li><li>Includes a cord retention tray</li><li>ETL/RoHS-certified</li><li>1U rackmount</li></ul> <p><b>Best For:</b> Companies looking for a rugged basic PDU.</p> <p><b>Price:</b> \$209.95</p>

Product	PDUs Direct C-16V1-C20MX	PDUs Direct CW-8H2-C20M	Rackmount Solutions BED Series
			
Description	<p>The C-16V1-C20MX is a metered 0U vertically-mounted PDU that features 16 NEMA 5-20R outlets, multiple in-feed plug types, and a local amp meter. Engineered to be compact, the C-16V1-C20MX is mounted in the rear dead space, so your rack space is open for equipment and ventilation.</p> <ul style="list-style-type: none"><li>15- or 20-amp steel-cased enclosure</li><li>Includes local LED input current monitoring to accurately measure the amps drawn on the connected power circuit</li><li>Immediately observes new equipment's impact on the collective current draw</li><li>Loads each circuit to its threshold safely, decreasing the risk of overloads</li></ul> <p><b>Best For:</b> Small to midsized organizations looking for a compact PDU.</p> <p><b>Price:</b> \$225</p> <p><b>Contact:</b> (888) 751-7387   <a href="http://www.pdusdirect.com">www.pdusdirect.com</a></p>	<p>With the 208V CW-8H2-C20M, you can control and monitor your outlets remotely through an IP connection or serially for out-of-band access and enjoy the combination of local metering and remote management. This PDU also provides power and environmental monitoring, and when power or environmental conditions surpass the maximum limit, users are alerted through SNMP or email alerts. The industrial-grade outlets provide multiple in-feed plug types and upgradeable firmware for dependable power distribution. Outlet Grouping also lets users reboot both single- and dual-power servers with just one command.</p> <ul style="list-style-type: none"><li>Individual and grouped outlet control</li><li>Environmental monitoring</li><li>Network and serial connections</li><li>Eight NEMA 5-20R outlets or eight IEC C13 outlets</li></ul> <p><b>Best For:</b> Small to midsized organizations looking for a remotely controlled power unit.</p> <p><b>Price:</b> \$360</p> <p><b>Contact:</b> (888) 751-7387   <a href="http://www.pdusdirect.com">www.pdusdirect.com</a></p>	<p>The Rackmount Solutions BED Series comes in a variety of sizes with heights of 24, 48, and 70/72 inches. All units are 120 volts and come UL- and cUL-listed. The BED Series protects against overloads on each vertical power strip through a resettable circuit breaker, and the rugged, gray aluminum exterior protects against physical damage. The 15-amp vertical power strips feature snap-on/slide-off mounting, while the 20-amp models have spring-clip mounting.</p> <ul style="list-style-type: none"><li>Lighted on/off switch (available without; please ask)</li><li>Two-year product warranty</li><li>15-foot cord included</li></ul> <p><b>Best For:</b> Small to midsized organizations looking for a simple power strip PDU.</p> <p><b>Price:</b> Starts at \$66</p> <p><b>Contact:</b> (866) 207-6631   <a href="http://www.rackmountsolutions.net">www.rackmountsolutions.net</a></p>



Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Tessa Warner Breneman

# & Tools

## Cyber Switching Dualcom PLUS



The Cyber Switching Dualcom PLUS is for IT administrators that need to manage equipment around the clock. The Dualcom PLUS includes features not found on other entry-level vertical PDUs. Cyber Breaker, the Virtual Circuit Breaker, isolates overcurrent conditions to one outlet and protects other equipment on the bank, thereby reducing downtime. Individual current monitoring on every outlet lets you monitor the usage on every outlet and make informed decisions on how best to manage your power grid.

- Remotely monitor and manage your equipment through a Web browser, a Telnet session, or with SNMP commands
- Schedule times for outlets to power on and off
- Event logging
- Warnings for over- and under-currents

**Best For:** IT administrators needing an entry-level intelligent PDU with a robust feature set at a great value.

**Price:** Starts at \$599 per unit

**Contact:** (888) 311-6277 | [www.cyberswitching.com](http://www.cyberswitching.com)

## Cyber Switching ePower



Cyber Switching's ePower family is targeted at data center managers searching for greener solutions. These products integrate enhanced features while remaining reliable and affordable. Patented Individual Outlet Power Metering and Control provides billing-grade metering for each individual outlet at an accuracy of 2% or better. Utilizing the unit's full-color LCD touchscreen or a standard Web browser, IT personnel can keep up-to-date on critical information, including real-time power information, load details, input line utilization, and system status. ePower saves your company time and energy while also saving the environment.

- Patented Cyber Breaker® technology protects equipment by limiting overcurrent conditions to a single outlet
- Color LCD touchscreen has an intuitive interface
- Two high-speed USB ports can support up to 127 peripherals, such as environmental sensors
- More than 60 high-density PDU configurations
- Network connection allows for remote monitoring and management of your power usage

**Best For:** Companies looking to implement a comprehensive data center management plan.

**Contact:** (888) 311-6277 | [www.cyberswitching.com](http://www.cyberswitching.com)

## Eaton ePDU Core Power Series



The Eaton ePDU Core Power Series is built to provide reliable power distribution for high and ultra-high power density applications. The 30A three-phase Core Power Series units are optimal for 208V three-phase solutions and up to 50A of power. They are available in both basic and monitored network technologies. In addition to being able to remotely monitor the current draw of individual sections, the monitored versions also have the capability to monitor for hot spots or cooling loss within the enclosure.

- Deliver adequate, but not excessive power, targeting 8.7kW per enclosure
- Minimize wasted poles to fully utilize available power on panel boards
- Prevent temperatures from reaching levels that demand costly cooling solutions

**Best For:** Mid- to enterprise-level data centers with high power requirements.

**Price:** Starts at \$499

## Rackmount Solutions SPDU20-0U Power Commander IQ



The SPDU20-0U Power Commander IQ is a network-controlled PDU from Wiremold/Legrand that delivers secure remote access to all power outlets through an HTTP Web browser, Telnet, SNMP, external modem, or email. Additionally, users can send control commands through email, and the AutoPing feature reboots the system if it ever goes down. Through the embedded Web server, you can modify settings or the system status and view the current or temperature through the TCP/IP network or a local direct connection. The SPDU20-0U Power Commander IQ offers three hardware options for mounting in racks and cabinets.

- 64-bit network security with username and password protection and IP screening per outlet
- Alarms for predetermined settings, including audio buzzer, email, TRAP or data log, and alarm message time interval
- Convenient Access Control List for assigning access rights

**Best For:** Small to midsized businesses looking for flexible mounting options for racks and cabinets.

**Price:** Starts at \$430

**Contact:** (866) 207-6631 | [www.rackmountsolutions.net](http://www.rackmountsolutions.net)

## Server Technology Smart Power Monitor



The rack-based Smart Power Monitor from Server Technology lets you add current load or power monitoring to your cabinet via Web GUI using either a serial connection or a Web-based interface. Additionally, you can be sure your CDU's power in-feed is correctly loaded. The Smart Power Monitor can support two external 10-foot probes, which measure the temperature and humidity levels. You can view the conditions through a Web interface and receive alerts when environmental levels surpass thresholds you've set.

- Input current monitor measures the aggregate current draw on each power circuit
- Remote management via Web-based interface or serial connection
- Supports two external 10-foot probes that measure temperature and humidity
- True RMS current monitoring

**Best For:** Organizations that need to remotely monitor and aggregate information for data centers and other facilities and already have Basic or Metered PDUs deployed.

**Contact:** (800) 835-1515 | [www.servertech.com](http://www.servertech.com)

## Server Technology Sentry Power Manager



The Sentry Power Manager from Server Technology is engineered to let users access and manage multiple Sentry devices in an IP-based enterprise network. Not only do you get a global view of all Sentry CDUs, but you can view devices based on their temperature, humidity, current, and device status.

- Access through any standard network browser
- Group and cluster outlets for remote reboot and power data on one CDU, across linked CDUs, or across an IP address
- Logs by start and end date include information such as discovery and user login
- Trending capabilities include the ability to graph using start- and end-date temperature, humidity, infeed load, infeed power, system watts/unit area, and system total power
- Real-time alarm notification

**Best For:** IT managers needing to remotely manage power consumption and maximize energy efficiency.

**Contact:** (800) 835-1515 | [www.servertech.com](http://www.servertech.com)



## Report Reveals Rebound In Data Center Infrastructure Market

IDC released its Worldwide Quarterly Data-center Infrastructure QView report, which details data center spending in terms of shipments and end-user revenue for companies in the data center infrastructure market. Products represented in the findings include PDUs, UPSes, data center cooling equipment, and racks and cabinets. According to IDC, the market for such products has made a significant improvement in the second quarter of 2010—revenues increased by 6.9%, and shipments saw a 3.6% improvement compared to the first quarter. Year over year, shipments were up 2.6%.

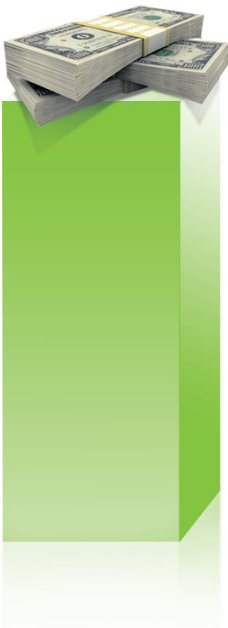
Katherine Broderick, senior research analyst for servers and data centers at IDC, says there are many contributing factors to the growth in the worldwide data center infrastructure market, including cloud build-out, overall IT rebound, increasing new builds and retrofits of existing data centers, and an increase in IT managers viewing their data centers as strategic assets in the long term. According to Broderick, racks are the fastest-growing segment. “Racks are growing faster than cooling, PDUs, and UPS systems,” she says. “This is because the prices for racks have increased on average worldwide and because more of them are being shipped than in Q2 2009.”

Companies leading the pack in sales include Emerson Network Power and Liebert (in the cooling market), claiming a combined 47.9% of revenues in the second quarter of this year. Eaton dominated the data center UPS market with 30.2% of revenues, and HP acquired the top spot in the data center rack market, taking 22.5% of revenues. Broderick attributes this success to each company’s willingness to rapidly innovate to make their solutions more efficient for future data centers. “Vendor solutions are becoming more modular, easier to deploy, and easier to dynamically monitor,” she says.

### Looking Ahead

It’s hard to tell what the increased spending will mean for the market in the long term, Broderick says. “We’re seeing a lot of enterprises consolidating their many data centers into fewer, larger data centers,” she says. “In the short term, this consolidation will be good news for the worldwide data center infrastructure market as these new or retrofitted data centers need to be fitted with new, updated equipment.” However, she says, “In the long term, there are many diverse effects of which the magnitude of each remains unknown. These effects include virtualization, cloud, regulations, energy expense, data growth, and many others.”

by Antona Beckman



PHYSICAL INFRASTRUCTURE

## SIX QUICK TIPS

# Investigating Alternative Energy Options

## Finding The Right Fit For Your Enterprise

by Bruce Gain

**MOST ENTERPRISES HAVE** at least thought about using alternative energy for their data center power needs at some point, whether it is for environmental stewardship reasons or to become less reliant on the power grid of local utility companies. However, many data center managers hesitate to invest in wind, solar, photovoltaic, and other alternative sources of energy because of the costs and the risks involved by investing in such relatively new technologies. Still, a lot of good can come out of making the switch for at least some of your data center’s power needs, so when weighing the pros against the cons, here are some ways to make better informed choices.

### Talk To Your Utility Company

So your enterprise decides to consider alternative-energy options to power your data center. Where do you begin? The local electric utility company is a good place to start, says Ruben Peijnenborgh, managing director of Shields Environmental ([www.shields-e.com](http://www.shields-e.com)).

The local utility provider should be able to communicate how your data center can access the different alternative power sources and what kind of infrastructure your enterprise will need to use the power. In some cases, unfortunately, you may be interested in a particular alternative power source, but may learn from the utility company that it is unavailable in your region. “Hydroelectric power sites or wind turbine farms close to the data center are good first choices,” Peijnenborgh says.

### Find The Right Third-Party Firm

After determining what sources of alternative energy are available in your area, the next step is to find reliable consulting firms that can help you put the necessary infrastructure in place. It is highly unlikely that someone on the IT staff has the skills to manage connecting a wind turbine-powered generator to your enterprise’s data center or to even access power from a local hydroelectric dam, so a third-party service provider will probably be required.

When selecting a consultant, the same processes should be used when selecting any third-party vendor for your data center, such as checking references and

certifications. However, in the area of environmental consulting, prices can vary, which is another factor to consider during the vendor selection process. “I am not saying it is a good idea to select the cheapest option, but you will likely find that there is a wide difference in prices between equally qualified vendors,” Peijnenborgh says.

### Crunch The Data

Some alternative energy options might seem like a good idea on the surface, but they suffer from drawbacks that only become apparent after a more in-depth analysis. Key variables to consider when studying different alternative energy options include CO<sub>2</sub> emissions, environmental impact, and, especially, costs measured in kilowatts over the course of several years.

“Look at all of the different pieces of the puzzle,” says Bill Kosik, principal data center energy technologist, Technology Services, for HP. “More progressive utility companies that offer [alternative energy] should be able to provide base preliminary rates and rates for clean power generation [over the course of time], which enables you to better analyze how you are doing the right thing environmentally.”

Indeed, one mistake far too many organizations make is to depend upon average CO<sub>2</sub> and energy source data for a region, says Jack Pouchet, a board member of The Green Grid ([www.thegreengrid.org](http://www.thegreengrid.org)) and director of energy initiatives for Emerson Network Power ([www.emersonnetworkpower.com](http://www.emersonnetworkpower.com)). “Instead, [it is better] to obtain the actual energy source data for the specific portion of the local utility grid that the data center is sourcing from,” Pouchet says. “One needs to understand this energy profile to determine both the actual CO<sub>2</sub> emissions that you will be reporting from operations and the existing alternative and renewable energy systems component.”

### Think Secondary Source

Drawing power from wind turbines, solar panels, and other nontraditional power sources is still more expensive than power from the main grids that utility companies provide. So when looking at alternative energy options, it is important to realize that at least in the near term, it will be difficult to achieve cost savings.

### Best Tip:

## Don’t Expect Miracles

Powering your data center with electricity from alternative sources is a step in the right direction, but don’t expect to be able to use electricity from only renewable or carbon-neutral sources in the near future. “You shouldn’t be too ambitious nor have too high of expectations at this point. If you think that by putting solar panels on the roof that you are going to save a lot of money, you will likely find that it is not going to serve everything once you get into the details,” says Bill Kosik, principal data center energy technologist, Technology Services, for HP. “We are going to see incremental improvements, but don’t expect to see any mega leaps in the technology.”


The main issue preventing the wide-scale adoption of alternative energy in data centers is the limited capacity batteries have to store power that comes from solar panels, wind turbines, or other renewable energy sources. Before the battery problem is solved, traditional electricity grids will likely remain the main power source for the foreseeable future. “Renewable energy technology is there, but battery storage still remains the main issue,” Kosik says.

### Most Practical Tip:

## Don’t Discount Energy From Waste

The idea of using energy from environmental waste for data center electricity needs is often not taken seriously, such as harvesting power from landfills or, in the case of HP, cow manure. For example, HP has successfully shown how it is possible to source enough electricity to power a 1-megawatt data center from methane in manure collected from 10,000 dairy cows. “It is not a way-out-there idea,” Kosik says. “In the case of landfills, something has to be done with the methane gas anyway, so using the gas as an energy source for data centers can be very beneficial.”

For example, a data center that consumes 1 megawatt of electricity would require 100,000 square feet of solar panels to meet its power needs, which translates into about 25 cents per kilowatt hour compared to about 10 cents per kilowatt hour that companies often pay for power from traditional grids, Peijnenborgh says. In the case of fuel cells, the cost is about 20 cents per kilowatt hour.

Given the relatively high price, it is thus recommended to use alternative power as a secondary source of electricity for most enterprises. “Renewable energy from photovoltaic sources and wind turbines, for example, is typically used as supplementary power and not as the primary source,” Peijnenborgh says. 

## BONUS TIPS

■ **Start small, think big.** Data center construction budgets are measured in millions of dollars, and alternative energy projects can be as expensive. So just as it is prudent to test new software or servers in a lab environment, it is equally prudent to do a trial run before relying on an off-the-traditional-grid source

of electricity, says Ruben Peijnenborgh, managing director of Shields Environmental ([www.shields-e.com](http://www.shields-e.com)).

■ **Use the energy credit option.** Your enterprise may not have the resources to invest in an alternative energy project, and the local utility company may not offer

alternative energy as a service option. Bill Kosik, principal data center energy technologist, Technology Services, for HP, says a possibility in this case is to purchase energy credits from the utility company, which are used to invest in renewable energy development.



HOW TO

# Reduce Your Data Center’s Carbon Footprint

## Steps Toward A Greener Data Center

by Brian Hodge

• • •

ACCORDING TO A RECENT McKinsey study, by 2020, the carbon footprint of the computers running the Internet will exceed that of air travel. Additionally, a Gartner study concludes that between 2005 and 2025, data center energy costs will rise 1,600%.

Trends like this forecast a big hit to the environment and company budgets alike. But with creativity and wise technological investments, your data center can be a minimal contributing factor in these spikes, saving green by going green.

“Not only is it good for everyone on the earth, it’s also good for our customers because they save money,” says Paul Durzan, director of unified computing at Cisco Systems ([www.cisco.com](http://www.cisco.com)). “The less power you use, the [fewer] components you buy, the more money you save.”

### The No. 1 Action You Can Take

According to Brian Fry, vice president of sales and marketing at RackForce Networks ([www.rackforce.com](http://www.rackforce.com)), one factor outweighs all others in shrinking a data center’s carbon footprint: “At this point in time, the single biggest way to reduce carbon is to locate your data center at a renewable power source.”

Energy from renewable sources—solar, wind, hydroelectric—is often an option available from local power companies

PDUs, and CRACs, newer models of these can make a difference.

“There are always improvements in that whole area,” Fry says. “I think what you’re seeing is improvements in energy savings in the 10 to 20% range for a lot of those things.”

He also notes seeing a 50% improvement over the traditional CRAC approach by using in-row coolers instead.

**Adjust the thermostat.** The viability of this depends on your room’s layout. Where servers are in a high-density cluster, a 10-degree boost in the thermostat could indeed lead to overheating. However, Fry says, “If you’ve spread out your servers properly so there isn’t a lot of density in any part of the data center, you can probably pull that off.”

**Optimize your A/C flow.** Whether it’s combined with turning up the thermostat or on its own, there’s a payoff in preventing cool air from pooling where it does no good and directing it where it’s needed.

The simplest method might be using floor fans. Fry also describes a clever low-tech method used at RackForce: channeling and confining airflow with the kind of thick, plastic curtains used in supermarket meat departments, which made “amazing improvements in our efficiency,” he says.

“What you need to do is control where the air sits around down low,” Fry says. “If you control that properly, then it cools and builds up, and then it nicely flows through the fronts of the servers and out the back.”

To further encourage the funneling action, RackForce mounted baffles on top of the racks to keep cool air from flowing over them as the area filled up, instead of through the server fronts.

### Giant Leaps

The greatest potential for cutting energy consumption lies in replacing outmoded technologies with newer, better successors. In addition to its operational efficiency, virtualization is also one of the best ways to reduce power consumption, because it allows you to use less hardware to accomplish the same amount of work.

Also, evolving system designs are making drastic cuts in power consumption possible. A prime example is Fibre Channel over Ethernet, which consolidates storage and network traffic into a single cable type.

“Anytime you go with a Fibre Channel over Ethernet solution, you have a very good opportunity to reduce your energy,” says Cisco’s Durzan. FCoE can alone reduce power costs by 30%.

There’s also unified computing, with systems combining virtualization and dynamic provisioning to create an intelligent environment in which workloads shift among hardware as needed. In periods of low demand, this can let you shut down machines that aren’t in use.

One key strategy here is the use of service profiles, which specify the power requirements of applications on virtualized servers so they can draw what they need, but no more, when moving among hardware.

“By using service profiles, that’s been another very good way for customers to not

## Help In Estimating Your Carbon Footprint

Being able to measure your carbon footprint will let you gauge your progress as you strive to reduce it. Although this procedure lies beyond the scope of this article, these resources can help:

- The EPA provides company-wide calculation tools at [www.epa.gov/climateleaders/smallbiz/footprint.html](http://www.epa.gov/climateleaders/smallbiz/footprint.html).
- The U.S. Energy Information Administration, [www.eia.doe.gov](http://www.eia.doe.gov), furnishes energy conversion calculators and many other resources.

only get operational efficiency, but also start to reduce the amount of servers in their data center,” Durzan says.

Although the costs of replacing entire systems, or even phasing components in gradually, may initially seem prohibitive, it’s really a matter of deciding where your budget goes.

“If you do the math on the cost of your power, your payback could actually be there quite easily,” says Fry. “Instead of paying for power, now you’re paying for technology.”

Design improvements have also led to more efficient cooling technologies, although there are more restrictions here than with upgrading network systems. It can be hugely difficult to retrofit a cutting-edge cooling system into an existing data center.

There’s also a growing trend in locating new data centers in cold climates to take advantage of “free cooling”: pumping the cooling system’s water outside to a kind of radiator, where it chills to air temperature before circulating back into the data center.

“About nine months a year we run with no [powered] chillers,” says RackForce Networks’ Fry. “We can run strictly off the free cooling system, which costs nothing other than buying the original technology.”

Looking ahead, this is why data centers of the future may increasingly lie far north of the businesses they serve. **P**

### Key Points

- The No. 1 way a data center can reduce its carbon footprint is to switch to a renewable energy source, the best of which is hydroelectric power.
- Smaller steps that can add up include upgrading to newer, more efficient UPSes, PDUs, and CRACs; optimizing your cold air flow; and possibly turning up the thermostat.
- The greatest cuts in energy consumption come from adopting new technologies in network systems and cooling.

whose main sources of electricity are still based on fossil fuels. Of these, hydroelectric is ideal for data centers. While solar and wind work well for residential customers, whose demand waxes and wanes, hydroelectric better suits the continual power draw of data centers.

“It’s like a big battery,” Fry says, “because the water is behind a dam, so you can control when you need it. It’s steady and reliable and you always have it when you need it.”

Unfortunately, renewable energy often comes at a premium price, so once you go with a green energy source, the next priority is to use less of it.

### Small Steps

Making incremental changes can add up to noticeable reductions in power consumption.

**Upgrade to energy-efficient components.** If it’s been a while since you’ve swapped out such components as UPSes,

# PROCESSOR

## Subscribe Today!

Call (800) 819-9014

## Subscribe Online!

Go to [www.processor.com](http://www.processor.com)

Processor is the industry’s most comprehensive source for:

- Snapshots of new data center and IT hardware and software
- Rundowns of major industry news
- Information on manufacturers and resellers
- Tips, strategies, and advice from experts in the field



FEATURED COMPANY

OF SPECIAL INTEREST TO HEALTH & GOVERNMENT DATA CENTERS

# Serious Physical Protection

Firelock’s Vaults Can Withstand Environmental Extremes To Protect Your Most Valuable Information

by Holly Dolezalek

ALL DATA WORTH PRESERVING is important, at least to the company that spends the money to store it. But even so, there’s data that a company saves because it makes sense to do it and data that it stores because it absolutely, positively can’t lose it. Preserving the latter type is how Firelock got its start.

Firelock ([www.firelock.com](http://www.firelock.com)) builds and installs modular vaults that protect media and equipment from fire, earthquakes, and

only on fire, because there are conditions that come with fire that can be just as damaging as the flames. For example, the vault’s door is weather-stripped to prevent moisture from fire suppression systems from entering it. The vault is shielded from electromagnetic pulses and can include monitoring systems that alert administrators to temperature, humidity, and other environmental changes, as well as closed-circuit TV monitoring and door entry monitoring. The vault can also have its own fire suppression system,

records, hospitals have to protect sensitive patient data, and many healthcare providers store records for which they could be liable, legally or civilly, if they lose them. It’s the same for brokerages and other financial institutions that protect client and financial data to avoid both compliance problems and business disruption.

For the most part, those customers are Fortune 1000 companies, although Firelock does serve some small credit unions and municipal governments. Smith explains that many of those customers are offsite storage companies and cloud providers that need to protect their customers’ data and equipment but also need a way to differentiate themselves from their competition. “We do a lot of work in colocation with companies that want to be able to say that their customers’ servers are protected by more than a chain-link fence or a glass wall,” Smith says. Although Firelock vaults still protect more media than equipment, Smith thinks the balance will shift the other way over time.

Sales In The United States

Only about 5% of Firelock’s business comes from overseas installations, and for the time being, Smith says that won’t change. “We don’t really try to market ourselves overseas, although we do get clients coming to us through our Web site,” he says. “For the most part, people want to build vaults because they’re worried about litigation over lost records, and the U.S. is really the only place where that happens.”

The company has a dedicated sales team, but plenty of Firelock’s business comes by way of its Web site. The company also has arrangements with some integrators and other players in the data center world that subcontract with Firelock to create the design for a vault within their overall data center designs. Other providers, such as vendors of refrigerated server cabinets or air conditioning systems, work with Firelock on a similar basis. And the company gets business from the trade shows it attends year-round, such as Data Center World, the Government Services Administration show, and shows for such organizations as the Society of American Archivists.

Driven By Construction

Although Firelock has continued to grow, the past few years have been interesting because its business is driven by the construction industry, which has taken a big hit during the recession.

“I’ve talked to a lot of IT administrators who say that five years ago, they would have said for sure that by 2010, they’d be in their new data center,” Smith explains. “Right now, people are making do for longer with their existing data centers.



“Now that Sarbanes-Oxley and HIPAA have changed the landscape, people understand that security is really important.”

- Firelock’s Hugh Smith

other disasters while maintaining the correct conditions of humidity and temperature. Made of a steel structure, an outer and inner vault door, and panels made of a spun ceramic material, Firelock vaults are tested for up to five hours in fires that reach up to 2,000 degrees Fahrenheit and are then subjected to a pounding with high-pressure fire hoses after that. “Our philosophy is that you put all your eggs in one basket, and we protect the basket,” says Hugh Smith, president of Firelock.

Firelock’s headquarters is in Kutztown, Pa., but it has another office in Pennsylvania and a third in Texas, as well as manufacturing locations in Texas and Indiana. Firelock manufactures the wall panels, roof panels, fire dampers, cable trays, and many other components of the vaults but buys the vault door from a vendor. Firelock modifies that door with an inner door so that the vault can get a Class 125 fire rating, which means that it does not permit the temperature inside the vault to go above 125 degrees.

Firelock has installed vaults for 1,500 entities during its 25 years in business, but many companies are repeat customers. “They might start with one vault, then they outgrow it, and so we build them another,” Smith says.

Moving To The Vault

Firelock vaults protect data and equipment from fire, but it isn’t enough to focus

which uses a suppression agent that leaves no residue.

Crews for Firelock install vaults all over the country and overseas, as well. Most vaults vary from the size of an office to the size of a basketball gym, Smith says, although Firelock has installed multiple vaults at military bases that are 50 x 50 feet and add up to 10,000 square feet.

Many of Firelock’s customers come from the healthcare industry. Pharmaceutical companies need to protect batch

Firelock Vault Features

- Modular, lightweight design allows vaults to be custom-built in a variety of configurations, including multilevel units
- Spun-ceramic vault panels withstand temperatures of more than 2,000 degrees Fahrenheit
- Unique cable tray system prevents metal conduits from bringing heat into the vault
- Vaults are protected against electromagnetic fields with magnetic shielding components
- AC Duct/Damper assembly ensures proper air circulation that won’t damage contents of the vault

FIRELOCK

(610) 756-4440  
[www.firelock.com](http://www.firelock.com)

- Firelock designs and builds fire-proof, modular vaults that are able to withstand the effects of fires, earthquakes, and other catastrophic events.
- The company’s vaults are ideal for protecting the sensitive information and materials of healthcare and financial institutions.
- “Our philosophy is that you put all your eggs in one basket, and we protect the basket,” says Hugh Smith, president of Firelock.

They’re holding off and making changes to their current one instead of just building a new one. And I’ve heard from an integrator who told me that he has a lot of clients who are waiting until the economy turns around and then they’ll build.”

Smith says the company hasn’t been dragged down with the construction because it has followed a conservative course, which includes trying to make sure that it stays at the cutting edge but doesn’t get ahead of the market. That means staying current with how data centers are being built so that Firelock products can still be easily installed and integrated with surrounding infrastructure. But Smith believes that the need for Firelock’s product will only continue to grow. “When we first came out with our product, it took awhile for the market to catch up with why they needed that level of security,” he says. “But now that Sarbanes-Oxley and HIPAA have changed the landscape, people understand that security is really important.”

Smith explains that liability for data is also getting pushed further and further out. “First it was doctors who had responsibility for records, then it was doctors and hospitals, then doctors and hospitals and third-party data centers,” he says. “At first, only the institution like a hospital had to have a SAS 70 audit [an audit of an organization’s controls, including those for information technology], but now the off-site data storage provider does, too. They say it doesn’t matter if you’re not processing information; if you’re storing, you have ability to lose it.”

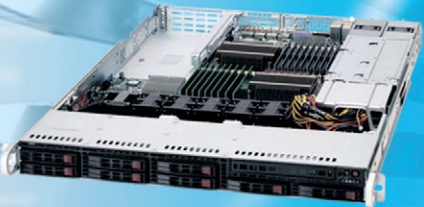
Other, less industry-specific trends, such as cloud computing, mean that Firelock isn’t going anywhere, Smith says. “When you put enormous amounts of data into the cloud without protecting it, you’re taking an enormous risk,” he says. “We’ve moved 14 million tapes from traditional storage to our vaults in the last few years, as people have decided, ‘You know, storing this on a shelf isn’t going to cut it.’”



SUPERMICR<sup>®</sup>

The Evolution  
of IT

10Gb Ethernet  
Solutions



1026T-6RFT+  
Dual 10Gb Ethernet LAN  
8 2.5" HDD Hot-Swap SAS/SATA Drive Bays  
Gold Level High-Efficiency, Redundant Power



6016T-6RFT+  
Dual 10Gb Ethernet LAN  
Gold Level High-Efficiency, Redundant Power Supplies



6026T-6RFT+  
Dual 10Gb Ethernet LAN  
94% Efficiency, Platinum Level, Redundant Power Supplies



TwinBlade<sup>®</sup>  
10 Blades (20 DP Nodes) in 7U  
Dual 1Gb Ethernet, Dual 10Gb Ethernet (optional)  
94% Efficiency Platinum Level 2500W Power Supplies

10G LOM (LAN on motherboard)

- Dual 10Gb Ethernet LAN onboard controller
- 1U, 2U, 3U and 4U Solutions Available

Blade Solutions

- Switched 10Gb Ethernet Access for Systems of Up to 20 Blades
- Up to 10 External 10Gb Ethernet Connections (SFP+)

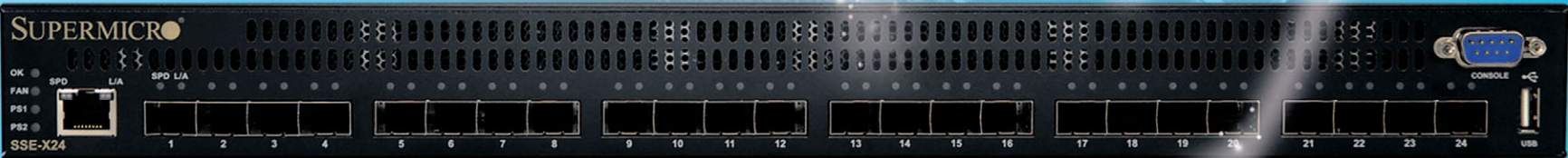
Standalone Switch

- 1U , 24 Port, Full Bandwidth
- Advanced Layer 3 switching

It's in our DNA.

SSE-X24S

- 24 Ten-Gigabit Ethernet ports - SFP+ Connectors
- 480 Gbps Switching Capacity



SSE-G48-TG4

- 48 One-Gigabit Ethernet links- 48 RJ45 Copper ports- Four fiber SFP combo ports
- Up to four 10-Gigabit Ethernet uplinks
- 184 Gbps Switching Capacity



SSE-G24-TG4

- 24 One-Gigabit Ethernet links- 24 RJ45 Copper ports- Four fiber SFP combo ports
- Up to four 10-Gigabit Ethernet uplinks
- 136 Gbps Switching Capacity



- AMAX

1-800-800-6328

www.amax.com
- Arrow Electronics

1-888-427-2250

www.arrownaep.com
- ASI

1-800-2000-ASI

www.asipartner.com
- Bell Micro

1-800-232-9920

www.bellmicro.com
- Ingram Micro

1-800-456-8000

www.ingrammicro.com
- MA LABS

1-408-941-0808

www.malabs.com
- Synnex

1-800-756-5974

www.synnex.com
- Tech Data

1-800-237-8931

www.techdata.com

www.supermicro.com

©Super Micro Computer, Inc. Specifications subject to change without notice. Intel, the Intel logo, Xeon, and Xeon inside, are trademarks or registered trademarks of Intel Corporation in the US and other countries. All other brands and names are the property of their respective owners.



**Improving Your Storage**

Is storage a major pain point at your enterprise? We compiled tips and advice to improve your storage setup and strategies in four key areas

**Use Cloud & Virtualization To Improve Your Storage | 26**

■ Today's storage architectures bear little resemblance to those of years past. This transformation is due partly to the rise of storage virtualization and cloud-based offerings.

**Streamline Email Storage | 27**

■ Since its inception, email has gone from a simple means of sending quick messages to a full-blown force to be reckoned with in the data center. With that in mind, here are some tips for boosting an enterprise's email storage power.

**Smarter Storage Backups | 28**

■ Although they sit at the end of the line of most storage environments, backup solutions are crucial to business continuity in the event of data loss. Keep the following tips in mind when planning improvements to back-up capability.

**Maximize Lifecycle Management | 28**

■ Storage lifecycle management is critical to make the most efficient use of current resources. Data experts recommend the following tips to enhance the lifecycle management of storage.

# Use Cloud & Virtualization To Improve Your Storage

Tips For Boosting Your Storage Efficiency & Effectiveness

by Christian Perry

AS IF TIME-WARPED TO A technological paradise, today's storage architectures bear little resemblance to those of years past. This transformation is due partly to the rise of storage virtualization and cloud-based offerings, both of which can boost the efficiency and flexibility of storage environments in organizations of practically any size. Whether you're new to these concepts or well-entrenched in their technologies, it pays to stay on top of improvement methods to ensure you're getting the best bang for your storage buck.

## Start Slow

According to David Wirt, senior vice president and global head of managed services for Tata Communications ([www.tatacommunications.com](http://www.tatacommunications.com)), cloud-based and virtualized storage remain relatively new concepts for CIOs. While these technologies could very well represent the future of IT storage, it's important to ensure that the integrity of

## Use Mixed Storage In Virtual Deployments

Performance-related issues on virtual storage arrays can occur due to disk contention or not having enough spindles serving as "worker bees" for the data access, notes Jeff Lamothe, vice president of disaster recovery strategy and operations for Corus360 ([www.corus360.com](http://www.corus360.com)).

To avoid these problems, Lamothe recommends using a mixture of drive types (including SSD and 15,000rpm SATA) to implement an optimized data placement mechanism. In this type of configuration, disk retention can be reduced and lower latencies can be achieved for applications that demand higher performance levels.

## Keep Two Data Copies

Delving into the world of cloud storage can be confusing and potentially disappointing if your IT organization isn't prepared to handle hiccups that might occur along the way. However, it's possible to avoid data-related problems by keeping a copy of data both locally in your data center and at the cloud provider while you're working with new cloud storage offerings, building new internal storage processes and practices, and plugging into new storage APIs, explains David Powers, business development manager at Cycle Computing ([www.cyclecomputing.com](http://www.cyclecomputing.com)).

"It will take time to get comfortable with the cloud service and how it fits into your business workflow," Powers says. "While you're moving up the learning curve on the technology and building relationships and trust with the cloud storage provider, I would recommend you keep a local copy of data for a set period of time, which will vary for each consumer of the service."

## Don't Sell Yourself Virtually Short

Virtualized storage is a complex concept to the uninitiated, but potential customers can help ease their introduction by ensuring that the vendors they work with cover all essential bases. According to Lamothe, these include multitiered capabilities, iSCSI with multiple speed support, Fibre Channel storage, continuous snapshots for data protection, replication technology that's bandwidth-friendly, thin provisioning, and scalable architecture that allows for near-unlimited growth. It's also critical to examine how those elements are implemented to satisfy your



organization's storage architecture, which may be unique to other architectures.

"Many storage systems have become virtualized, but some are more efficient than others, and proper due diligence is needed to look at each vendor's solution," Lamothe advises. "At the end of the day, all vendors have controllers, enclosures, and disks, but it is the software and unique designs that use this hardware that make each one very different from the other. Going to a virtualized storage approach would also require a product that is pretty easy to use."

## Make Monitoring A Priority

The top concern for organizations considering public cloud storage is security, according to Rick Clark, CEO of Aptare ([www.aptare.com](http://www.aptare.com)). Although encrypting data is a must before moving it onto cloud-based storage, it's also important to ensure that data can actually be recovered once it's in the cloud.

"One cannot just park data on cloud-based storage and forget about it," Clark says. "Organizations need to continually monitor the status of their cloud-based storage and to ensure that they can truly recover data from the cloud on demand." He continues, "Testing recoverability of data from cloud-based storage should be done as part of an overall IT operational assessment. This way, when an auditor requests information that is stored in a cloud, an organization can respond quickly and without going through a fire drill to find the missing data."

## Consider D2D2C

Even organizations with plenty of cloud experience tend not to rely on cloud storage to hold their most critical data, but there are certain implementations that can bring cloud into the mix for an added level of storage. Lamothe says that D2D2C, or disk to disk to cloud, can provide an efficient way to utilize cloud technology while minimizing any potential cloud-related risks.

"The D2D2C method provides the organization the ability to have a private cloud, which is most secure, whereas you could implement a disk to cloud [D2C] directly to a public cloud—but then you lack the ability to do local restores in the event that your Internet connection was either not available or slow," Lamothe says. "It really depends on your security requirements, as well as your recovery time objective." ■

## Key Points

- When starting with cloud-based storage, consider moving only certain data types to the cloud, such as data that's used by Internet-facing applications.
- Storage virtualization covers a wide range of technologies and concepts, so make sure potential vendors can accommodate any needs your storage architecture has—or will have.
- Security continues to be a top concern among cloud storage customers, so it's essential to continuously monitor and test your organization's ability to recover data stored there.

mission-critical data is never compromised during a shift to cloud or virtualized storage, he says.

"Enterprises looking to move to cloud-based storage need to feel comfortable about the security of their data on the cloud storage platform," Wirt says. "A gradual move would be to start with Internet-facing applications and then move into software test and development using a managed hosting solution for more sensitive and performance-oriented applications."

## Best Tip: Categorize Data By Value

Without knowledge of your data's value to the organization, it can be difficult to determine which data can be stored in the cloud. Rick Clark, CEO of Aptare ([www.aptare.com](http://www.aptare.com)), says that the best method for achieving this value categorization is through the analysis of applications that use and/or generate the various data types in your organization. He also recommends considering both

the time factor, because data becomes less valuable to an organization as it ages, and regulatory and operational requirements that can place demands on data and affect its overall value.

"Organizations that are successful at characterizing the 'time-value' of their information can now determine the correct storage environment to hold

this information: Tier 1 enterprise-class storage systems for mission-critical data, Tier 2 storage for data accessed frequently [that] is not critical to the overall operation of the organization, [and] Tier 3 storage for archival copies of data not requiring immediate access. A viable option for an organization's Tier 3 storage needs is certainly cloud-based storage," Clark explains.



Most Business Laptops Not Secured

Even in this security-conscious age, only 40% of those polled in a UK Check Point survey indicate their laptops are encrypted—in spite of the fact that some 68% have access to a business VPN. The security issue is complicated by a variety of mobile consumer devices entering the business environment as most of those devices also lack encryption, according to the study. More than half of the surveyed businesses allow personal smartphones and laptops to be used for business, and 40% of those businesses lack a formal security policy for those devices.

Gartner Study Looks At Benefits From New Data Center Designs

According to data collected by research firm Gartner, new data center technologies can allow for a 300% growth in capacity using 60% less space than current data centers. Targeted areas of improved efficiency include power utilization, space allocation, and capital expenditure. Gartner notes a trend toward higher computing density as data center floor space becomes more crowded; as a result, power and cooling needs also increase. Because of this, the cost to run machines will in some cases more quickly exceed the money spent purchasing the actual hardware. The firm advocates several measures to improve data center efficiency, including being smarter about layout and design and using virtualization.



ITC Plans Probe Into Apple/Motorola Patent Complaint

The U.S. International Trade Commission will be stepping in to investigate the ongoing patent infringement battle between smartphone makers Apple and Motorola. The ITC announced early this month its plans to launch a probe into Apple’s claims of patent infringement against Motorola, which Apple filed against its rival following Motorola’s own allegations of patent infringement filed against Apple in October. The suit and countersuit cover a number of patents: Motorola alleges that Apple’s products violate 18 patents currently held by Motorola involving technologies such as antenna design, wireless email, location-based services, and proximity sensing; Apple, on the other hand, has accused Motorola of violating six patents, three of which are touchscreen-related, with its Droid, Droid 2, and Droid X phones.

Germany-Based SAP Ordered To Pay Oracle \$1.3 Billion

Software maker SAP has been ordered to pay \$1.3 billion in a settlement to Oracle over copyright infringement. This high-profile battle involved SAP’s TomorrowNow subsidiary, a unit that confessed to copying data from illegally acquired documents to steal clients from Oracle. SAP allegedly used a software tool called Titan to spy on Oracle’s patches, updates, fixes, and customer programs. Jurors reportedly discussed settlement figures between \$519 million and \$3 billion dollars. Oracle originally took legal action against SAP in March 2007; TomorrowNow closed its doors at the end of 2008. SAP plans to appeal the ruling.

# Streamline Email Storage

An Archive System Can Increase Efficiency & Ease Storage Requirements

by Elizabeth Millard

SINCE ITS INCEPTION, email has gone from a simple means of sending quick messages to a full-blown force to be reckoned with in the data center. Email is used to quickly and widely disseminate vital information, send important documents and presentations, and open doors to valuable business deals.

“The days that businesses considered email as just a communications tool are long gone,” notes Dave Hunt, CEO of archiving firm C2C Systems ([www.c2c.com](http://www.c2c.com)). “Presently, email is a knowledge cache, a tool for corporate governance, and a record that can enable effective regulatory compliance and e-discovery practices.” Because of all that email has become, archiving it requires business intelligence and policy development, Hunt adds. With that in mind, here are some tips for boosting an enterprise’s email storage power.

## Key Points

- As you are calculating email storage requirements, factor in existing database storage as well as projected data growth.
- When determining total cost of ownership, include the funds needed for ongoing support, as these costs can overtake capital expenses.
- Use shortcuts on the email server and the user’s mailbox for shuttling email to an archiving solution; this improves server performance and eliminates the need for mailbox quotas.

## Base Plans On Existing Storage & Projected Data Growth

When calculating storage requirements, a data center manager should factor in existing database storage, PST (personal storage table) data, and ongoing archive data extracts, advises Hunt. Be sure to take compression ratios and index requirements into account, as well. Repository reporting provides trend analysis to assure that growth patterns fall in line with expectations.

Hunt adds that the location of the archive server is a critical decision when the current infrastructure is distributed over a geographically wide area and using network connectivity. An incorrect configuration could impact the overall success of an archiving project due to compromised performance.

## Manage The Pilot Phase

When creating a storage archiving system, IT is likely to find that it’s easier to run a pilot project first, to make sure the system is suitable for the enterprise. A pilot is also helpful for running tests of the software, equipment, and other resources being used. The scope of a pilot or testing process will need to be communicated to all stakeholders, Hunt notes. The items to share include the goal of the test, how results will be measured, and how they will be applied when moving from the testing phase into full implementation.

“Undefined goals can let projects drift,” Hunt says. “The beta user community would ideally be drawn from differing departments and users and should not be heavily populated with IT technical staff.” He adds that this should be the case because IT staff tend to resolve issues directly rather than reporting issues, and that might affect the results of the test.

## Assemble An Archive Support Team & Assign Specific Tasks

To drive the archiving process forward, key staff members must be given specific tasks, Hunt says. These include deploying desktop updates, purchasing and maintaining hardware, adjusting backup routines, provisioning storage, drafting policies, communicating with the legal department on data retention issues, and developing a laptop support strategy.

Although many IT staff members will take on numerous responsibilities when it comes to archiving email, drawing distinctions about these larger needs can be helpful for creating more cohesion in terms of staff roles.

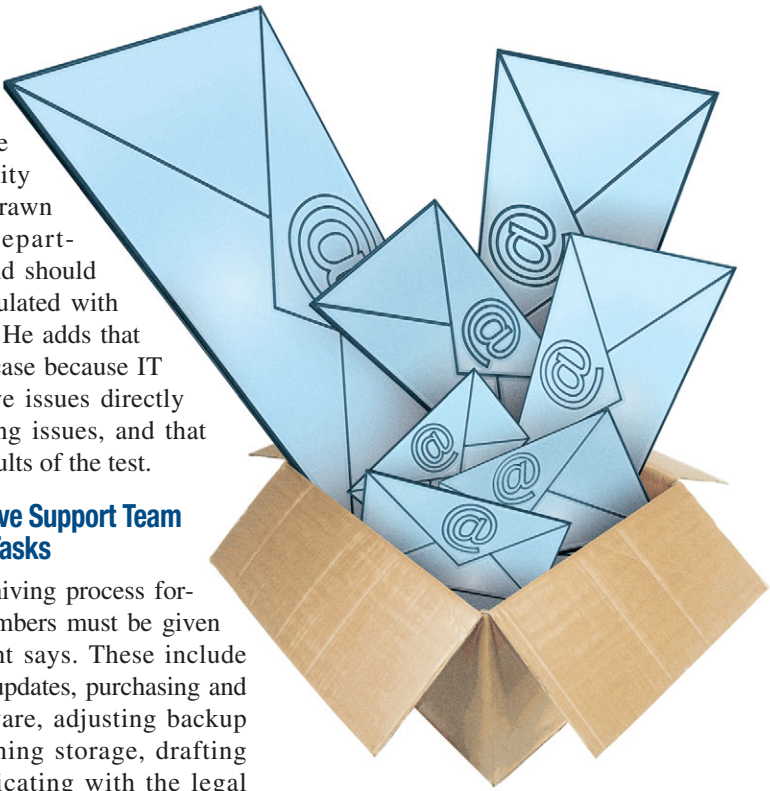
## Research Options With Long-Term Cost In Mind

Once storage and backup requirements are determined, IT managers should consider both in-house and outsourced options, says Ahmar Abbas, senior vice president of remote infrastructure management at CSS Corp. ([www.csscorp.com](http://www.csscorp.com)). “The IT managers should develop a good map of their storage requirements, including how much data is structured, like databases, and how much is unstructured,” he says, adding that managers should examine associated growth rates for both of those types of data.

When considering in-house options, IT managers will probably consider various virtualization and deduplication technologies, which can reduce overall storage requirements and stretch email archiving budgets further. IT managers should consider using outsourced storage providers for backup or archives, Abbas believes. But in both cases, analysis should be done based on total cost of ownership, including the funding needed for staff members who are required to support the storage environment.

## Consider Enterprise Archiving Technology With Shortcuts

Tom McCaffrey, director of archiving at Kroll Ontrack ([www.krollontrack.com](http://www.krollontrack.com)), notes that organizations can improve email storage through the use of enterprise information archiving technology. He says that once a message is ingested into the archive, after a predetermined duration, the message can be replaced by a shortcut on the email server and the user’s mailbox. In addition to the benefit of moving the content from a server to lower-cost archive storage, email server performance is significantly



improved as content is removed during shortcutting, McCaffrey states.

“Shortcuts effectively eliminate the need for mailbox quotas, enabling organizations to get rid of offline mail stores such as PSTs and NSF’s,” he says. “Email storage is further optimized through the retention policy and scheduled destruction capability of the archive.” Retention schedules are determined by the organization to meet the needs of the business and achieve compliance with regulatory requirements, McCaffrey adds. Messages that are older than the retention period, and not under legal hold, are destroyed, further reducing the strain on the mail server and the amount of email stored within the archive.

“Archives also improve email storage by providing a central repository for authorized users to search for discovery, investigations, audits, and compliance,” McCaffrey says. “Knowing where the organization’s email is, optimizing what is kept, and making it searchable reduces business and legal risks and reduces e-discovery costs for organizations.”

## Top Tip: Consider The Expectations Of Users

Dave Hunt, CEO of archiving firm C2C Systems ([www.c2c.com](http://www.c2c.com)), notes that it’s more than likely that delivery of archived emails to a user’s mailbox will take more time than data located on a primary server. Providing delivery metrics in advance of implementation isn’t recommended, he advises: “Setting the expectation that some delay could be experienced is a better idea during the roll-out phase of the archiving project. Discussion should be held to explain the benefits of user interaction to the archived data.” He adds that very little user training should be required, but encouraging a department to have an expert available is recommended for any desktop process.



FEATURE PACKAGE

# Smarter Storage Backups

Simple Approaches & Techniques Can Reduce Cost & Risk

by Carmi Levy

• • •

**BACKUPS DON'T GET** the respect they deserve, but they should. Although they sit at the end of the line of most storage environments, backup solutions are crucial to business continuity in the event of data loss. Exploding demand for storage, however, is placing unprecedented pressure on backup solutions to maintain pace. Keep the following tips in mind when planning improvements to backup capability.

### Add Parallelism Into The Mix

The biggest headache for most storage managers often involves backup windows being breached. Unchecked growth in primary storage demand can quickly result in backup procedures exceeding the allowed time. Consider scheduling compute-intensive operations such as compression or deduplication during regular production hours to reduce the load during overnight backup windows. Instead of blindly backing everything up, take snapshots or clones of data at specific points during the day.

"Instead of trying to compress the entire backup into a four-, five-, or six-hour window, we could potentially use those resources over 24 hours by having snapshots or a copy of the information at a point in time when you'd want it to be backed up," says

Christopher Willis, senior director of solutions consulting for Hitachi Data Systems Canada ([www.hds.com](http://www.hds.com)). "The backup would subsequently be completed at a later time."

### Rein In Unstructured Data

End users working on multiple versions of Word and Excel files are fuelling huge growth in storage demand. Deduplication before these disparate files find their way into the backup stream can significantly reduce the pressure on related systems.

"I'm backing up the same data over and over again," says Chris Devlin, Canadian country manager for FalconStor Software ([www.falconstor.com](http://www.falconstor.com)). "So it just makes sense that I can apply deduplication. If I end up with a 10-to-1 deduplication ratio, I can eliminate 90% of the necessary physical media."

Although Devlin cautions against applying deduplication to production systems because of the potential performance impact, the backup environment is an ideal place to start given the potential cost savings and operational efficiencies.

### Don't Back Up Blindly

Instead of repeatedly backing up data that has not changed over a given period of time, data center managers can use monitoring tools to identify stale data and

### Key Points

- Backup-related activities can take place anytime. Consider executing them in parallel during the day rather than in a traditional overnight period.
- Data monitoring tools can identify stale data and allow more precise control over how it can best be backed up or archived.
- Instead of backing up everything, use deduplication to gain control over rampant growth in unstructured data.

tailor backup runs to include only data that's changed.

"If you're looking at the tape costs of running a terabyte of backup every night of full backups on these large, unstructured data sets, it's extremely expensive," Willis says. "If you don't have the right thought leadership in place to take a deeper look at the actual data itself, its profile, and usage patterns, then you're not in a position to improve things."

Willis says managers can use monitoring tools to identify stale data—in one case, 60 to 70% of analyzed data hadn't been touched in 90 days. Armed with that knowledge, IT can implement policy-driven procedures to pull non-changing information out of the regular backup stream. This can

help IT minimize often unnecessary capital investments in backup solutions—a key benefit as storage demand continues to spike over the next decade.

"Instead of trying to surf the growth curve, let's chop the curve in half," Willis says. "Take the stale data that's not being used and stub it off to an archive system that's purpose-built for long-term, non-changing data."

### Look Beyond Capital Investment

Improvements to backup infrastructure can have a significant impact on ongoing operational expenses. However, in an era of frozen or restricted IT budgets, it's often difficult to gain approval for major capital-intensive projects. Shifting the focus away from capital investment, which, despite its higher profile, is actually responsible for a far smaller percentage of the overall IT budget than operational expenses, can help.

"IT professionals look at their capital budgets and say it's too expensive," Devlin says. "But the CAPEX budget is small—maybe 5%—compared to OPEX. It's critical that we look at things proportionately, and CAPEX shouldn't be the front edge of the wedge."

Devlin says IT professionals who engage with business leaders and convince

# Maximize Lifecycle Management

Know What You Have, What Needs To Be Saved & What You Can Purge

by Phil Britt

• • •

**THE AMOUNT OF DATA** a company stores can quickly get out of hand, with virtual machines, videos, sound files, and document files mushrooming to occupy the available space. Although the cost of storage continues to drop, the danger is that the low price makes buying additional storage the easy decision, but not necessarily the right one.

Even with the falling price of storage media, the cost is higher to the enterprise, because the more storage an enterprise has, the more risk there is from e-discovery and regulatory compliance, the longer searches take, and the more costly it is for data centers to delete the data in the future. Storage lifecycle management is critical to make the most efficient use of current resources and will forestall the need, at least temporarily, to add additional storage. Data experts recommend the following tips to enhance the lifecycle management of storage.

### Implement A Storage Strategy

"You have to determine how long you keep information and how long you keep

### Key Points

- Examine data to determine what is the most critical and what the enterprise should move to less expensive forms of storage and then purge data that the enterprise no longer needs.
- Use automated techniques to eliminate duplicate data in primary and backup storage.
- Charge the owners of the data for the cost of storage, which will prompt them to seek to aggressively manage the life cycle.

it at a high level," says Dan Leary, vice president of marketing for Nimble Storage ([www.nimblestorage.com](http://www.nimblestorage.com)). "Keeping data on disks or even tapes is prohibitively expensive. . . . You should get rid of data aggressively."

Leary says the storage strategy should consider whether the company is publicly or privately held and the type of industry it's in, as some have specific retention rules for certain types of information. Leary recommends that enterprises have a time

frame for moving data to different media and eventually purging data based on type and frequency of access.

"The longer that you keep the information, the more costly and complex that storage becomes," Leary says. Searches and the storage infrastructure itself become more complex and costly the longer an enterprise keeps data alive. Improving the existing storage infrastructure is more cost-effective and should be considered so companies can allocate 2011 IT budgets to more mission-critical projects. Leary recommends keeping data no longer than necessary to minimize any potential liability.

Brian Babineau, senior analyst for Enterprise Strategy Group, agrees that the costs don't come solely from the cost of storage media. "You create a legal liability for data and are responsible for it if it exists," Babineau says. "If you're not managing it correctly and encrypting it, you spend all of your time worrying about the potential liability. You may want to delete the data to be more effective and to reduce your storage costs."

Babineau adds, "Once you develop a strategy, you all of a sudden become more efficient, [and] you remove a lot of the duplicate data."

Some companies concern themselves too much with the life cycle of the storage media rather than the data stored on the media, adds Ashish Nadkarni, practice lead for GlassHouse Technologies ([www.glasshouse.com](http://www.glasshouse.com)). "You need to decouple the data from the technology when you are deciding on your storage policy," Nadkarni says.

The storage policy should determine the life cycle of certain data depending on type, industry, and a cost-benefit analysis of the cost of storage vs. the value of the data to the enterprise, according to several experts.

### Deduplication Helps Storage Growth

The growing amount of video makes deduplication an essential element of storage lifecycle management, says Sanjay Castelino, vice president of product marketing and product management for Solar Winds ([www.solarwinds.com](http://www.solarwinds.com)). "We produce a lot of video," Castelino says. "A video might be 200MB. If 10 copies of that are saved, that's 2GB."

Multiply the 2GB by several different videos, and it's easy to see how storage capacity quickly fills. Eliminating duplicates preserves storage for other uses, Castelino says.

Enterprises should also use deduplication at the backup stage, says Steve Whitner, product marketing manager for Quantum ([www.quantum.com](http://www.quantum.com)). Several people within the organization may be backing up the same data, so deduplication at the backup stage actually frees up much



them to prioritize operations-focused investments in areas like backup “can become heroes in their company because they’re driving out so much operational expense.”

Avoid Confusing Backup With Archiving

Organizations have often used backups as archiving solutions to avoid the relatively high costs associated with

keeping data online and accessible. But retrieval costs from tape are prohibitive, and the process can be disruptive to the business, as well.

“Today there is an alternative in the form of specialized data repositories that can maintain data online and accessible at a cost comparable to tape while keeping on-demand retrieval instantaneous,” says Ramon Chen, vice president of product

management with RainStor ([www.rainstor.com](http://www.rainstor.com)). “By having a good online retention strategy for archiving, backups can be simplified and refocused back on disaster recovery needs.”

The biggest obstruction to improved backup capability is often behavioral. FalconStor’s Devlin says change-averse IT and business professionals may be afraid to rock the boat. They may want to rethink their conservatism as storage and backup demand growth continue to accelerate, however.

“These things are often perpetuated based on fear,” says FalconStor’s Devlin. “People shouldn’t think within their box. It’s the easiest thing in the world to do the thing you’ve always done. But it may not be the best thing.”

Top Tip: Look Beyond Just Backing Up

Laser-tight focus on the backup process often results in blindness to underlying business drivers. As a result, IT’s backup planning scope needs to be expanded.

“Backup is the wrong way to look at it,” says Chris Devlin, Canadian country manager for FalconStor Software ([www.falconstor.com](http://www.falconstor.com)). “It should be what service level I need to deliver, how fast I need to recover, whether the data is there, and whether it’s been tested.”

Devlin says IT must work closely with the business to establish realistic recovery point objectives and recovery time objectives that the business both needs and can afford.



more storage and system resources than deduplication at the primary storage stage.

Incorporate Predictive Information Management

“Enterprises now archive so much data that deciding what to keep and what to delete is literally beyond human capacity,” says Craig Carpenter, vice president of marketing at Recommind ([www.recommind.com](http://www.recommind.com)). “Predictive information is the most cost-effective way to improve a company’s business processes while reducing their exposure to information risk. Given the increasing demand for enterprise-scale data clean-up, smart companies are using this same advanced technology to improve storage lifecycle management and information governance.”

Predictive information management focuses on classifying information upon creation. Individuals can tag their own documents, providing an “expiration date” when the data theoretically is purged, but in practice, that doesn’t always occur, according to Carpenter. The content may not be tagged at all or may be tagged improperly.

“We espouse automating as much of that process as possible,” Carpenter says. Companies can do this by using keywords, but this method isn’t very accurate. “We promote a more sophisticated approach, using rules based categorization or machine learning.”

Rules-based categorization determines the lifespan of company data based on enterprise rules for different types of content, according to Carpenter. Some software

applications not only automate storage, but also learn over time to improve the storage categorization as it encounters new data.

Charge Appropriate Business Units For Storage Costs

By charging the business unit that wants to save data for the cost of storage, an enterprise can end the storage of data that is extinct, says GlassHouse’s Nadkarni. If there is a cost, the business unit would no longer store data just because it’s simpler to keep it than to purge it but will instead store only data that truly has value to the organization from a business or legal liability standpoint.

The practice of charging for storage will also motivate the business unit to better manage the life cycle of storage by moving data to less expensive storage media as the data and its availability become less critical, Nadkarni adds, pointing out that less accessible, slower forms of storage tend to be much cheaper than more readily available storage.

Top Tip: Create A Data Directory

Build an inventory of the data that the enterprise has, who owns the data, and where it exists on the network, recommends Brian Babineau, senior analyst for Enterprise Strategy Group.

“Most companies don’t know what they have,” Babineau says. “The reason is that the growth of information has been so rampant that no one in the company has taken the time to understand what they have. This is important to know from a cost and risk standpoint. You have to be able to manage the bits and bytes that may have some actual value to the company.”

There are plenty of hardware and software tools to enable a firm to better manage the life cycle of storage, but those tools are of little value if the enterprise doesn’t have a good inventory of its data, Babineau says.

Seagate To Remain Public Company

Hard drive maker Seagate announced it will not become a private company and that it will buy back \$2 billion in stock from shareholders in an effort to raise earnings per share. The California-based company says it ceased talks with private equity firms that wanted to buy the company because it felt the purchase price was too low. Seagate expects improved demand for hard drives to produce at least \$2.7 billion in revenue for the fiscal 2011 second quarter. The company says it will fund the share buyback with a combination of cash on hand, future cash flow, and potential alternative sources.

Study Shows Data Isn’t Always Adequately Protected

According to the most recent Symantec Disaster Recovery Study, data center managers are facing increasing complexity as more and more data is being stored in virtualized and cloud environments. As a result, the data is not protected as well as it should be. The study found that 60% of virtualized servers aren’t even in disaster recovery plans. Other findings indicate that on average it takes more than twice as long to recover from an outage than most data center managers anticipate. The study also found that although the frequency of disaster recovery testing has increased, it’s still disruptive to businesses.



Government Makes Proposals For Open Internet

The Obama administration recently outlined a plan that could provide a more open Internet. The plan would require high-speed Internet providers to regard all types of connections equally, meaning an ISP could not decelerate specific types of Web sites or applications while speeding up others. U.S. Federal Communications Commission Chairman Julius Genachowski says the plan will foster innovation on the Internet. Others believe the plan could enable ISPs to lock customers into tiered pricing schemes, where heavy Internet users are charged a higher rate than those who only use text communication. The FCC will vote on the plan on Dec. 21, and, if it passes, it will go before Congress for approval.

Red Hat Acquires Makara

In what has become a familiar refrain, another big name has bought a smaller partner to advance its cloud computing acumen. This time, Red Hat announced its intention to acquire Redwood City, Calif.-based Makara. Red Hat says the acquisition will bolster its platform-as-a-service portfolio. Red Hat plans to incorporate Makara’s Cloud Application Platform into its own JBoss Enterprise Middleware infrastructure. The idea is to continue to allow developers to code in their preferred frameworks, such as Java EE or LAMP, while the PaaS automatically handles scaling, security, deployment, and other issues, according to Makara.



# Open, Deperimeterized Network Implementation

Accommodate Mobile Employees & External Business Partners

by Kurt Marko

IT’S NO SECRET that the walls between work and personal life, home and office, and company-issued laptops and personal smartphones are breaking down. Boundaries are also blurring in other areas as enterprises increasingly rely on strategic partners, contractors, and service providers for key parts of their supply and support chains. This hollowing and virtualizing of the corporation necessitates a fundamental rethinking of network security design and internal system defenses. Many IT managers are still unsure how to make the transition from traditional walled garden network architectures to new, more open and adaptable, yet not overly porous designs. A good starting point is an examination of the business requirements driving change—the needs of customers, employees, business partners, and SaaS providers to access internal applications and data sources—and how best to accommodate them. As Fred Kost, director of security solutions marketing at

Newer approaches such as SSL tunnels simplify setup and configuration; however, the next stage in VPN evolution, according to Kost, is clients that make secure connections transparent and pervasive. These address most of the usability problems nagging mobile employees by offering always-on connectivity, automatically reconnecting to preferred networks, centralizing configuration and management, and adapting the tunneling protocol to the most efficient method for a given network. Before re-engineering a VPN solution, Kost says it’s important to know three things about the remote access environment: the user population, the type of devices they’re using, and where they’re coming from. In Cisco’s case, the company found 23 different types of mobile devices accessing its corporate network. This information informs the design by indicating which protocols and client software might work best, how geographically distributed VPN POPs (points of presence) must be, and how the user population can be segregated and controlled

Zones complement the needs of a mobile, distributed workforce and disaggregated business processes reliant on external services by enabling IT to tailor access to network resources to specific

then use credentials to control access to various network resources and zones. Although wireless and remote networks have been in the vanguard of applying network authentication, deperimeterization means the technique should be extended to wired LANs, as well. Gartner network analyst Tim Zimmerman finds that, unfortunately, most enterprises still view wired and wireless infrastructure as distinct entities, with separate policies, applications, and tools for each, even though they share much network infrastructure. Open networks mean this dichotomy must vanish. Zimmerman recommends that “During the next three years, enterprises develop common policies and tools for security, guest access, and network management for wired as well as wireless network infrastructures,” authenticating users across networks to “guarantee users are who they claim to be.” This means authenticating all clients, whether wired or wireless, local or remote, before granting network access. Given the maturity of WPA2 WLANs, Zimmerman advises clients to base their unified authentication architecture on 802.1X.

“Think about [security] policy independent of the technology; [consider] what you want to happen and then how to build it.”

-Cisco’s Fred Kost

Cisco (www.cisco.com), advises, “Think about [security] policy independent of the technology; [consider] what you want to happen and then how to build it.” He says that increased mobility is the most pressing challenge to existing security policies and architectures and is thus the best place to start in building a borderless network.

## VPNs For Remote Workers & WLANs

Although remote network access is nothing new, it’s becoming more pervasive, causing a shift in employee expectations. Employees increasingly view it as a necessity instead of a convenience. VPNs are the canonical means of providing secure remote access, and while many enterprises already have a solution in place, it may not have kept up with changes in technology, both in terms of network infrastructure and client device support. The earliest VPNs were cumbersome affairs using a network protocol (IPsec) better suited for a few network-to-network tunnels, not thousands of individual endpoints, and which required special-purpose client software (so-called supplicants) and tricky configuration. While some of the usability edges got smoothed as IPsec was integrated into Windows and other client OSes, it remains a rather “user-hostile” way to set up VPNs.

once they log on to the network—a topic we’ll come back to when examining how to apply network authentication within the corporate campus.

## Use Security Zones

Breaking internal networks into security zones (in which systems with like security requirements, policies, and risk tolerance are grouped) facilitates regulation and monitoring of information flows and is one of the most effective architectures for building a deperimeterized network. Zones are separated by controlled network perimeters, much like the coarse-grained partitioning provided by traditional gateway firewalls, except that the security perimeters are now much closer to individual systems. Although the details of zoned architectures are beyond the scope of this article, Burton Group analyst Dan Blum points out, “The perimeter mechanisms that define the zone boundaries may be physical, such as dedicated network firewalls, or logical, like virtual switches or VPNs.” According to Blum, the criteria for grouping systems are based on either communications requirements, such as connections to external business partners, outsourcers, or the general public, or security objectives, such as the sensitivity of applications and data and their subjugation to legal, regulatory, or audit requirements.

## Key Points

- Segment internal networks into security zones, with Internet-facing servers in the outer, least secure zones. Applications and their associated servers and databases, with higher security requirements, occupy increasingly secure zones, with traffic between zones restricted and monitored.
- Implement or upgrade VPNs and think about creating separate VPNs for different user groups—employees, contractors, and guests. Investigate next-generation VPN clients (supplicants) that improve the user experience.
- Use enterprise WLANs as the justification and trigger to implement network device authentication using 802.1X. Extend network authentication from WLANs to wired edge devices and eventually to the network core.

user populations. VPNs provide the secure communications channel while network authentication offers the mapping between network device and user.

## Implement Network Authentication

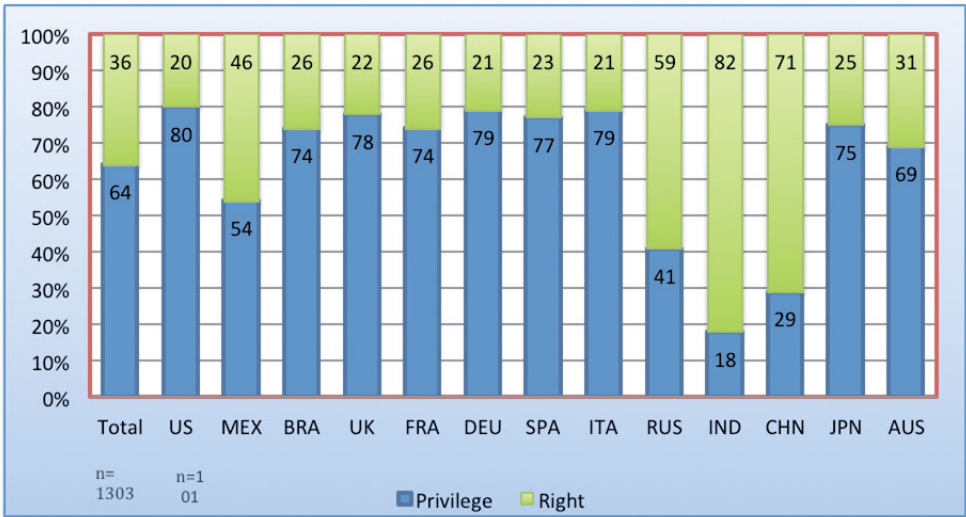
Ironically, VPNs and even secured wireless LANs can be more secure than their wired counterparts because user authentication is an inherent part of the network protocol—that is, both VPNs and WPA enterprise (but not preshared key) use a form of port-based access control based on the IEEE 802.1X standard. These typically authenticate users and groups against an enterprise directory such as AD. Network equipment compliant with 802.1X can

## Deperimeterized Networks Must Evolve

Moving from a simple network security design to an open, borderless one isn’t a one-time project, but rather a journey, says Kost. While mobile users and teleworkers provide the urgency for change, their needs should feed into a larger architectural rework to accommodate increased use of cloud applications, contract employees, SaaS applications, and the embedding of external business partners deeper into core business processes. Deperimeterized networks seek to maintain security while increasing flexibility, so Kost advises making policies and access methods as accommodating as possible lest employees continue to seek workarounds to what they perceive as overly restrictive limitations.

## Remote Access: A Right Or A Privilege?

Remote access is fast becoming an expectation by today’s workforce. When asked, “In today’s world, being able to work remotely is: (a) a privilege or (b) a right,” most in the U.S. (80%) still consider it a privilege; however, regional differences are wide, with an overwhelming 82% in India saying it’s a right.



SOURCE: THE CISCO CONNECTED WORLD REPORT: EMPLOYEE EXPECTATIONS, DEMANDS, AND BEHAVIOR—ACCESSING NETWORKS, APPLICATIONS, AND INFORMATION ANYWHERE, ANYTIME, AND WITH ANY DEVICE; OCTOBER 2010.



CASE STUDY

# Simplified Desktop Management

RES Software’s Workspace Manager Helps Nonprofit Organization Virtualize Its Desktops

by Robyn Weisman

LUTHERAN SERVICES IN IOWA, or LSI, is a nationally accredited human services agency that provides mental health services, services for people with disabilities, elder care, and a range of other services across all of Iowa’s 99 counties. LSI has about 1,000 employees, many of whom work offsite in rural counties. “Employees are spread out everywhere because we often go into the home to provide these services,” says Amy Juhnke, director of marketing communications at LSI.

In August 2003, two organizations—Lutheran Social Services in Iowa and Bremwood Lutheran Children’s Home—merged to form LSI. Roger Riggins, network administrator at LSI, arrived at about the same time and was tasked with finding a desktop management solution for its integrated workforce. Riggins previously had worked at a consulting company that specialized in deploying similar desktop virtualization solutions, and he had tested Workspace Manager (then known as Powerfuse) from RES Software ([www.ressoftware.com](http://www.ressoftware.com)), along with two other competing products, in a lab environment.

Riggins found RES Software’s Workspace Manager to offer the most powerful, flexible, and complete solution of the three. He implemented it into LSI’s newly integrated network soon after his arrival, and LSI has been using it ever since. “Because we had Citrix and Workspace Manager together, we were able to roll out virtual desktops really easily,” Riggins says. “We could build apps in quickly and build desktops on the fly so that users could access what they needed without delays and any [loss] of productivity.”

According to Riggins, Workspace Manager has the ability to allow IT departments at other SMEs to implement desktop virtualization and leverage its performance and

cost advantages. “Organizations that have been afraid to roll out [virtual desktops] can grab Workspace Manager, use it with their deployments, and feel comfortable that they’re going to be able to administer it on their own, rather than having to rely on consultants” for assistance, Riggins says.

### Unifying The Virtual Desktop

Implementing a virtual desktop architecture made sense for LSI, given its fluid and mobile workforce, but the challenge LSI faced with using only a straight Citrix desktop was enforcing all of the different security pieces of the desktop. “While you can prevent people from installing unauthorized applications or downloading spyware and malware by locking down different places in Windows or [by implementing] different

employees] may not even know about,” Riggins says. “It shows us any errors users have had during their logins and logoffs and allows us to fix them without having to wait for a user to call about the problem.”

Although Workspace Manager provides managers with alert capabilities, Riggins’ team doesn’t use them because the solution will automatically prevent users from installing unauthorized software or engaging in other problematic activity. “We would get so many alerts all day long, and I’m confident that Workspace Manager keeps these things from happening,” Riggins says.

### Snappy Performance

Workspace Manager keeps the desktop down to its essentials, which keeps performance snappy. “When we switch our remote workers over to the Citrix and Workspace Manager desktop, they couldn’t believe the difference. They were so happy to have the same desktop they had at [the office] that they could access from home or any broadband Internet connection, and it was a lot faster” than the previous VPN setup, Riggins recounts.

LSI employees no longer had to install work-specific applications on their PCs. They could now access hosted applications that were available to them based on the parameters Workspace Manager had set up for them. “We could say, ‘Everybody in the marketing department gets this application,’ or ‘Everyone in HR gets this application,’ and we controlled this using Workspace Manager,” Riggins says.

In addition, Workspace Manager supplies a replacement shell for Windows Explorer that made desktops easier to secure. “But it still looked like a Windows Explorer shell to our users and performed like a Windows Explorer shell—maybe even a little better,” Riggins says.

### The Right Price & Support

Being a nonprofit organization, LSI does not have much cash to throw at technology in general. Even though Workspace Manager cost some money up front, it has ended up saving LSI a lot of money in the long run. “We’ve recouped that money, and we continue to save money year after year,” Riggins says. “Because of the way Workspace Manager allows us to configure and control our environment, we don’t need to have as many IT people on staff. And the people we do have don’t have to spend as much time scripting, configuring, and testing as we would if we did not use it.”

Riggins also has been pleased with RES Software’s technical support. “They just opened a United States tech support office, which has been good, but even before that was there, their support from the Netherlands was really good, with great response times,” Riggins says. “They will work with me until it’s resolved. I don’t need them very often, but when I do, it’s always a great experience.” ■



policies, it’s tough to put your thumb on all of them,” Riggins explains.

Workspace Manager avoids these issues and others that arise as new applications and operating systems are added by providing a centralized location to handle these disparate concerns. “We could just make the desktop, put the applications on it, and then get back to work, without having to spend so much time trying to secure and enforce it,” Riggins says.

According to Riggins, Workspace Manager provides the flexibility to assign applications based on a per-user level, a per-group level, and even based on certain attributes in Microsoft Active Directory, a feature Riggins requested that RES Software build into Workspace Manager some time ago. “You can use LDAP or different Active Directory attributes and assign an application based on a user’s title, no matter what department he is in,” Riggins says.

### Worry-Free Protection

Because the mental health industry is so highly regulated, LSI needs to worry about compliance issues as well as security ones. “With our remote workers, it’s not just a matter of them opening Microsoft Word and sending a letter,” Juhnke says. “They have to document their notes immediately and maybe get prescription orders and other things inputted at that point, as well.”

Fortunately, Workspace Manager allows Riggins’ team to monitor employee work and learn immediately whether a security or compliance breach has taken place. “Workspace Manager monitors not only unauthorized use but also for any errors [our

## IT Departments Lack Tools To Manage New Technologies

A Network Instruments report says that a majority of companies are adopting new technologies such as cloud computing and virtualization, but they lack the tools to manage performance. According to the company’s annual State of the Network Global Study, 54% of network professionals have implemented cloud computing, but 56% said they didn’t have the right tools to troubleshoot problems in the cloud. Thirty-five percent said virtualization negatively affected their troubleshooting capabilities.

Steve Brown, a product marketing manager for Network Instruments, says such problems are common with the adoption of new technologies. “Monitoring strategies and tools are typically afterthoughts dealt with once everything has been rolled out,” he says. “In the case of both wireless and VoIP, companies would typically roll out the technologies and address visibility and troubleshooting issues after a crisis hit.”


Despite the problems, companies reported significant gains after adopting these technologies, the study found. Almost half saw improved application availability and reduced infrastructure costs after moving to the cloud, and 80% reported reduced energy and infrastructure costs with virtualization.

“These benefits, at least in the short term, far outweigh from an economic perspective any decreased visibility or new troubleshooting issues a network team might face,” Brown says. “But these cost gains are not sustainable in the long term without appropriate monitoring strategies and tools that provide visibility. As companies face serious performance issues without visibility into the cause, this impacts their ability to accurately resolve the issue.”

### Get The Right Tools

For companies that are thinking about adopting cloud computing or virtualization but want to avoid the troubleshooting problems reported in the study, it’s not necessary to go out and buy a new set of monitoring tools, Brown says. However, it is important for companies to check with a consultant to ensure that their infrastructures can support the technology.

For cloud computing, Brown says it’s important for network teams to be able to regularly check service availability and track service from the data center to the cloud provider. “Some SaaS providers offer regular Web reports for users to track their service availability and performance,” he says. “It’s a good idea to look for solutions that allow you to incorporate these reports when available into your troubleshooting workflow to be able to quickly and easily navigate to the performance problem.”



Virtualization requires a different set of questions, Brown says. “Depending upon how your virtual network is configured, you may be creating blind spots,” he says. “If you have an environment where a multitiered application is hosted in a virtual environment with all of the application’s tiers on the same physical host, you may not be able to view all of the communications between application components.”

by Kyle Harpster

RES Software  
Workspace Manager

A workspace environment solution that allows data center managers and network administrators to dynamically design and manage virtual Windows environments for their end users. Works in conjunction with desktop virtualization solutions such as Citrix XenDesktop and VMware View.

“Organizations that have been afraid to roll out [virtual desktops] can grab Workspace Manager, use it with their deployments, and feel comfortable that they’re going to be able to administer it on their own, rather than having to rely on consultants” for assistance, says Roger Riggins, network administrator at Lutheran Services in Iowa.

(610) 994-0577  
[www.ressoftware.com](http://www.ressoftware.com)



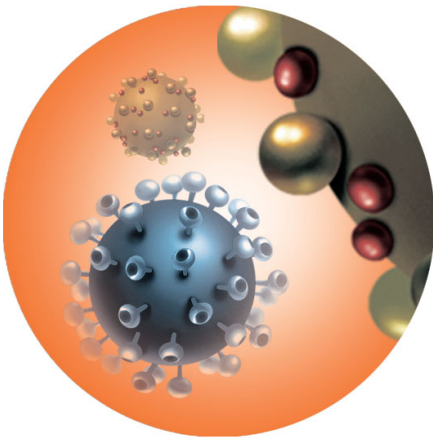
## Survey Sheds Light On Top SMB Threats

Trend Micro's latest global survey reveals that viruses continue to be the biggest perceived threat to the security of small businesses. More than 60% of the 1,600 corporate end users surveyed in the United States, Germany, Japan, and the United Kingdom say viruses are the most worrisome, followed by Trojans, data-stealing malware, data leaks, spyware, and malicious software marauding as legitimate antivirus software. Spam and phishing were both considered lesser threats to small businesses.

According to Ina Li, Trend Micro senior marketing research analyst, "Viruses continued to rank as the top concern among corporate end users since 2005, most likely due to the high awareness level." Trend Micro Threat Research Manager Jamz Yaneza says that the high ranking of viruses may have more to do with victims using a familiar term to describe any sort of security breakdown. "In reality, the highest threats today . . . are done mostly through Trojan horse applications, which are commonly referred to as bots and botnets and information stealers."

### Multifaceted Approach

Despite perceptions, however, Trend Micro's study indicates that corporate end users are aware that attacks come in various forms and require a multifaceted approach to defending against them. The survey found that 21% of the respondents feel vulnerable to data-stealing malware and 35% say they need better education regarding data-stealing threats. Among those surveyed in the United States, less than half (47%) install malware-blocking security software, 30% enforce malware-related security policies, and 28% offer education or guidance to employees.



"It is not enough to simply rely on [data leakage protection] to protect infrastructure and proprietary information, but rather it is a required component as part of the whole package," Yaneza says. "You need to have the infrastructure, the basic anti-malware, and finally email and Web content filtering."

Trend Micro's survey serves as a wakeup call to small businesses. "The obvious [solution] is backups as well as unified access control and monitoring," Yaneza says, adding that employee education is also essential to help employees grasp their roles in preventing data loss.

Dal Gemmell, senior global product marketing manager at Trend Micro, says that viruses and Trojans might be the most commonly used terms to describe security threats, "but data-stealing malware and data loss are becoming serious causes for alarm. Education, combined with the right security technology specifically designed for your small business, is crucial in the fight against these threats."

by Andrew Leibman

# The Zeus Trojan's Enterprise Impact

It Could Find A Way Into Your Organization, So Know How To Detect & Terminate It

by Sue Marquette Poremba

IN SEPTEMBER, the Zeus Trojan made national news after the arrests of dozens of people who reportedly stole millions of dollars from bank accounts in the United States and Europe. The suspects allegedly used Zeus in cyber attacks against banking sites.

The good news here is that there were arrests and steps taken to thwart future crime. The bad news is the suspects were money mules who used the techniques behind Zeus to commit the high-tech bank robbery. That means the people behind the Zeus code were not arrested, and Zeus is still on the loose and remains a dangerous piece of malware.

Zeus has been around for a long time in various forms and with different names, initially known as Z-bot and also known as Kneber and Gorhax. Believed to have been developed in Eastern Europe, Zeus focuses mostly on banking information.

"Right now, there are three primary groups operating Zeus botnets," says Sean Bodmer, senior threat researcher at Damballa ([www.damballa.com](http://www.damballa.com)), "but there are 50 Zeus groups we're tracking."

### Ways It Spreads

Zeus is spread in a variety of ways: in email spam, exploit kits, or drive-by downloads from infected Web sites. Bodmer refers to Zeus as a utility bot, meaning it can perform numerous functions, such as disabling firewall and antivirus, stealing serial keys for software such as Microsoft Office, and learning passwords and other authentication codes. It also takes screen shots and sends the data to what is known as a drop zone, which is typically controlled by a criminal operator.

As if that's not enough, Bodmer adds, "Once Zeus is on your system, it has the ability to send itself out to other individuals on the victim's contact list. Depending on how the person's computer is configured, it can even pull in contact lists from Web-based mail clients like Hotmail or Yahoo!."

Although the average computer user can be (and some likely have been) infected with Zeus, the Trojan is much more dangerous when it hits an enterprise system. Randy Abrams, director of technical education at ESET ([www.eset.com](http://www.eset.com)), says, "Consumers have far greater protections against theft than businesses do and generally have much less money to lose. . . . A business that gets hit by Zeus has a very short time to respond or they will have no recourse at all."

Philipp Wolf, director of virus labs at Avira ([www.avira.com](http://www.avira.com)), agrees. "Companies need to know about Zeus malware because it's trying to steal data and accounts in new ways, like redirecting

### Key Points

- Zeus focuses primarily on banking information.
- Zeus is spread in a variety of ways: in email spam, exploit kits, or drive-by downloads from infected Web sites.
- Once Zeus is discovered on the computer, getting rid of it is extremely difficult. Within an enterprise environment, where data is regularly backed up and recoverable, the experts recommend wiping the entire system clean and starting from scratch.

TAN [transaction authentication numbers] to SMS using a mobile Zeus Trojan," he says.

The problem is realizing that the system has been infected. Zeus tends to be stealth, often lying dormant until the user logs on to the banking authentication site. However, Harry Sverdlove, CTO of Bit9 ([www.bit9.com](http://www.bit9.com)), says that although

“Zeus has very specific behaviors. One of the first things you’ll notice is there’ll be a process writing into all of these other system processes, and that’s atypical.”

- Bit9's Harry Sverdlove

Zeus-infected sites may look legitimate and secure, the careful user will be able to note slight irregularities. For example, Sverdlove tells of a computer user who contacted him. "She was logging on to her online banking account, and she got the icon telling her that she was secure and connected to her bank site. Everything looked good, except smack in the middle of the screen was a prompt for a Social Security number, a PIN, and other personal information, which is not information that the bank would be asking for."

With a little digging, Sverdlove adds, users will see that Zeus leaves a few tell-tale signs. It makes some modifications to the Registry and leaves files on the hard drive. "Zeus has very specific behaviors," he says. "One of the first things you'll notice is there'll be a process writing into all of these other system processes, and that's atypical."

### Difficult To Get Rid Of

Once Zeus is discovered on the computer, getting rid of it is extremely difficult. On a single standalone computer, it

is a time-consuming chore involving a lot of rebooting in Safe Mode, manually deleting files, and repeating the process until the computer is clean. Within the enterprise environment, where data is regularly backed up and recoverable, the experts recommend wiping the entire system clean and starting from scratch.

"Also they should know that after an infection, it's better to change all logins for Web sites, for the computer, for the servers, and so on," Avira's Wolf says. "The data which is stolen from the victim can be configured for each Zeus version itself."

Bit9's Sverdlove says that avoiding Zeus relies on old-fashioned common sense. "Don't use a computer in unfamiliar areas like hotspots, and be careful about the links you click," he says.

Most importantly, Sverdlove and Bodmer both say, is to take Zeus seriously. Sverdlove calls it a game-changer. Bodmer notes that Zeus is the centerpiece of an organized crime ring whose objective is to steal as much money as possible.

"The reason Zeus is successful," Bodmer says, "is because the endpoint perimeter defenses in place today weren't designed with this type of threat in mind. Our position is, things like Zeus will find a way to get in, so the goal should be to detect and terminate the communication to the bad guys." ■

## The Zeus Trojan's Unique Traits

Zeus is unique among Trojans and malware because of its similarities to commercially sold software. "It is the only crimeware toolkit that I know of that actually comes in versions and with hardware licensing," says Bit9 CTO Harry Sverdlove ([www.bit9.com](http://www.bit9.com)). "You have to actually have a license to use it." The toolkit license gathers information on the user's hardware system and provides a hardware key so that the toolkit can only be used on that particular system. "In other words, it has copy protection built into it."



BUYING GUIDE



BUYING TIPS:  
Email Security Appliances

by Marty Sems  
• • •

EMAIL SECURITY is a critical component of any organization. But any appliance tasked with safeguarding email communication needs to be efficient and reliable. Here are the essential elements you need to consider when comparing email security appliances.

**Total cost.** “The acquisition cost is only part of it,” says Vircom Marketing Manager Damien Ramé (www.vircom.com). Service and support options, renewals, updates, and upgrades are also key factors. In addition, he says, IT admins will likely keep the appliance for a while, and if it’s adequate, they’ll stick with the same vendor. “Therefore, the longer-term costs must be evaluated and fit within the allocated budget,” Ramé says.

**Availability, security, and other features.** Before purchasing an email security appliance, Joe Fisher, executive vice president of worldwide marketing at Axway (www.axway.com), says you should “think

holistically about the problem set” facing your organization. “What is best going to serve the

Buyers’ Checklist

- ✓ **Reputation.** Is the vendor’s email security technology well-regarded?
- ✓ **Effectiveness.** How much spam and malware does the appliance actually block?
- ✓ **Performance.** Does a system pose a bottleneck under your company’s network demands?
- ✓ **Price.** Beyond the purchase and setup cost, how much will updates and support cost?
- ✓ **Ease of use.** Are both end-user and administrator interfaces straightforward?
- ✓ **Reliability.** Does an appliance have high availability features?

business, both today and in the future? What you don’t want to do is roll out a solution that solves the problem yet demands that every month you have to reinvest in it.”

Businesses rely on email around the clock. That necessitates 24/7 protection on the part of the security system, Ramé says. “The appliance must have built-in redundancy for the power supply and the hard disks,” with a minimum of RAID 1 data mirroring protection, he says.

“Email security appliances do a lot of disk I/O for storage, reporting, quarantining, and archiving. For larger organizations, this is often a bottleneck,” Ramé says. “Fast hard drives and RAID 5 configurations provide increased disk throughput and redundancy and are ideal for this kind of appliance.”

Fisher cites a need for flexible scaling both up and down the capacity scale as your organization’s needs change over time. After all, he says, “the volume of email isn’t going down.”

Device security is also essential, Fisher says. “Does the solution meet your security profile? Does it have the right certifications from a FIPS standpoint? Is that important? Are they using the right encryption algorithms for securing the data?” An IT data center manager or messaging architect should think about business, security, and architectural needs before choosing a product, he says.

Fisher also recommends that you choose an appliance with the right controls, governance, and visibility for your organization.

Key Terms

**Appliance.** A standalone device for running a particular application, such as email security.

**Hardened.** An operating system that has been made more secure, such as what’s found on most security appliances.


**Managed.** An appliance that “phones home” to be monitored by its vendor.

“It’s not only an IT operational thing; there are business unit requirements, and perhaps even C-level requirements, that may need to be met.”

**Watch vendor claims.** Vendors often tout high spam filtering rates and low false positive rates. But both can be exaggerated, Ramé says. Instead, the proof of an appliance’s merit is in independent tests from neutral third parties.

Also, when evaluating vendors and their offerings, Ramé says you need to ask these important questions: Does the company excel at service and support? Can it actually solve the problems you may experience, or will it ask you to reboot the appliance every time there is a glitch? Does it offer overnight replacements for defective units? Are the units maintenance-free, or do they require weekly tuning and fixing?”

**Ease of use.** Both the administrator and user interfaces of an email security appliance need to be easy to navigate, Ramé says. They might be accessible via browser, console, or installed app, but they should be clear and simple to understand so they don’t waste busy employees’ time. **P**



The Smart Choice for Text Retrieval® since 1991

# dtSearch®

## Instantly Search Terabytes of Text

“Bottom line: dtSearch manages a terabyte of text in a single index and returns results in less than a second” – *InfoWorld*

“Covers all data sources ... powerful Web-based engines” – *eWEEK*

“Lightning fast ... performance was unmatched” – *Redmond Magazine*

For hundreds more reviews & developer case studies, see [www.dtSearch.com](http://www.dtSearch.com)

**Highlights hits** in a wide range of data, using dtSearch’s own file parsers and converters

- Supports MS Office through 2010 (Word, Excel, PowerPoint, Access), OpenOffice, ZIP, HTML, XML/XSL, PDF and more
- Supports Exchange, Outlook, Thunderbird and other popular email types, including nested and ZIP attachments
- Spider supports static and dynamic web data like ASP.NET, MS SharePoint, CMS, PHP, etc.
- API for SQL-type data, including BLOB data

**25+ full-text and fielded data search options**

- Federated searching, advanced data classification objects, and special forensics search options

**APIs for C++, Java and .NET through 4.x**

- Native 64-bit and 32-bit Win / Linux APIs; .NET Spider API
- Content extraction only licenses available

Desktop with Spider	Publish (portable media)	Engine for Win & .NET
Network with Spider	Web with Spider	Engine for Linux

Ask about fully-functional evaluations!

[www.dtSearch.com](http://www.dtSearch.com)    1-800-IT-FINDS

Sensitive Data + Weak Chain of Custody =

# DISASTER



## WE SHRED LIABILITY

AND YOUR STUFF DOESN'T EVEN HAVE TO GO ANYWHERE.

Secure MDE destroys unsecure data, but we also eliminate companies’ liability. That warehouse of hard drives, that data center of backup tapes—they’re putting your company at risk. That’s where we come in.



The **SECURE SHARK™** is the most convenient, guaranteed data elimination solution available. It reduces sensitive data to a completely unrecoverable status, giving you the peace of mind that your company is protected.

**WHY US? BECAUSE WE’RE BETTER.**




- **WE COME TO YOUR PLACE OF BUSINESS** anywhere in the U.S. Sensitive data never leaves your site.
- **YOU CAN MONITOR THE DESTRUCTION PROCESS** and immediately examine the end product.
- **WE RECORD THE ENTIRE PROCESS** on digital video.
- **NO JOB IS TOO BIG.** Our high-capacity Secure Shark™ destroys up to 1,000 hard drives an hour.

Contact Secure MDE for your data elimination needs.  
888.312.2333 | [info@securemde.com](mailto:info@securemde.com)  
[www.SecureMDE.com](http://www.SecureMDE.com)

**SECURE MDE**  
MOBILE DATA ELIMINATION



# Email Security Appliances

Product	<h2>Axway MailGate</h2> 	<h2>Barracuda Spam &amp; Virus Firewall</h2> 	<h2>Fortinet FortiMail-100C</h2> 
Description	<p>Data loss prevention features join inbound and outbound protection in the Axway MailGate enterprise email security solution. MailGate is available as a hardened Linux appliance and can also be deployed in a VMware environment. It supports IPv6 out of the box, and it makes regulatory compliance easier, Axway says.</p> <ul style="list-style-type: none"><li>Antivirus: McAfee or Kaspersky engine-based virus protection with integrated policy controls</li><li>Virus outbreak protection: Zero-hour protection against new virus outbreaks with quarantining and notification options</li><li>Automatic updates with zero downtime</li><li>Integrated reporting and alert framework</li><li>Allows for policy-based disposition</li></ul> <p><b>Best For:</b> Enterprises looking for a comprehensive data loss prevention strategy combined with email security.</p> <p><b>Price:</b> \$5,300</p>	<p>The versatile, do-it-all Spam &amp; Virus Firewall appliance from Barracuda Networks uses a multilayer approach to content filtering, with three layers dedicated to virus blocking alone. The Spam &amp; Virus Firewall alleviates strain on the network and mail servers by winnowing out unwanted content ahead of time and performs full email scanning for both inbound and outbound email traffic.</p> <ul style="list-style-type: none"><li>Supports up to 100,000 users with per-user customer filtering policies</li><li>Available in eight models and as a virtual appliance</li><li>Speeds up recipient verification in Exchange and Domino environments</li><li>Protects against phishing and DoS attacks</li><li>Updates are provided by Barracuda Central, a 24/7 security operations center that continuously monitors and blocks the latest Web-based threats</li></ul> <p><b>Best For:</b> Enterprises, midmarket organizations, and service providers.</p> <p><b>Price:</b> \$699</p>	<p>The budget-friendly Fortinet FortiMail-100C email security appliance bears the brunt of spam and malware gatekeeping, freeing your small network from the burden of unwanted traffic. It can be deployed in a transparent mode or as a gateway or server. Automatic spam and virus updates, QoS, virtualization, and inbound/outbound SMTP routing combine to make one compelling package in this price range.</p> <ul style="list-style-type: none"><li>Processes up to 77,000 emails per hour with FortiGuard Antispam and Antivirus</li><li>1TB of archival and quarantine storage</li><li>Basic-mode GUI and wizard-based setup facilitate ease of use</li><li>Licensed by device; no per-user pricing</li><li>High availability options available</li></ul> <p><b>Best For:</b> SMB, SOHO, and remote/branch office.</p> <p><b>Price:</b> \$1,495</p>

Product	<h2>SonicWALL ESA 3300</h2> 	<h2>Sophos Email Security &amp; Data Protection ES1100</h2> 	<h2>Sophos Email Security &amp; Data Protection ES8000</h2> 
Description	<p>SonicWALL says that its ESA 3300 email security appliance delivers performance and scalability that is powerful yet easy to manage for a company of any size. The ESA 3300 integrates SonicWALL's GRID (Global Response Intelligent Defense) Network, SonicWALL Threat Center, and SonicWALL Labs to apply continuous updates on worldwide threats over multiple vectors. SonicWALL's GRID Network includes millions of SonicWALL antispam and email security sensors deployed at sites worldwide. This integrated approach uses customer ratings of email, predictive behavioral analysis, and innovative malware identification signatures. In doing so, SonicWALL says, the ESA 3300 supplies proactive, near real-time, self-correcting defenses that block both malware and their carrier channels in advance of many malicious cyber attacks.</p> <ul style="list-style-type: none"><li>Advanced reputation management</li><li>Effective spam-blocking techniques</li><li>Patented phishing detection technology</li><li>Five-step quick configuration takes a mere 10 minutes</li><li>Compatible with all email servers</li><li>SonicWALL GRID Network Anti-Virus</li></ul> <p><b>Best For:</b> Organizations in need of superior inbound and outbound email security.</p>	<p>Dual-core processing power helps the ES1100 handle up to 200,000 email messages per hour. Fortified with DLP, message forensics, and anti-malware defenses, the managed ES1100 is much more than a spam blocker. It boasts active and passive two-unit failover capability along with Sophos' remote monitoring and round-the-clock support.</p> <ul style="list-style-type: none"><li>Supports user block lists and personal quarantines</li><li>Browser-based three-clicks-to-anywhere console allows management of up to 10 appliances simultaneously</li><li>Automatic, no-cost upgrades</li><li>Three-year advance replacement hardware warranty</li></ul> <p><b>Best For:</b> Small to medium-sized organizations looking for an integrated solution combining spam and malware protection with DLP and email encryption.</p> <p><b>Price:</b> Starts at \$3,295</p>	<p>The flagship ES8000 email security appliance from Sophos packs powerful features into a 1U rackmount chassis. A managed, remotely monitored appliance based on a hardened installation of FreeBSD, the ES8000 can be clustered for multisite or scaled use. Its Sender Genotype technology blocks most spam at the gateway, while its Behavioral Genotype feature guards against malware, phishing attempts, and other threats.</p> <ul style="list-style-type: none"><li>Data loss prevention technology and optional SPX encryption protect sensitive data</li><li>Processes up to 550,000 messages per hour</li><li>Redundant power supplies</li><li>Mirrored 300GB SAS hard drives</li><li>Quad-core processor</li></ul> <p><b>Best For:</b> Large organizations in need of a managed security appliance.</p> <p><b>Price:</b> Starts at \$13,995</p>



Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Marty Sems

## Fortinet FortiMail-3000C



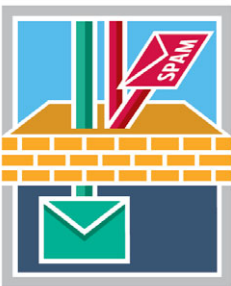
Twin Intel Xeon E5504 processors and 16GB of RAM make the Fortinet FortiMail-3000C one serious security platform. The new FortiMail-3000C works as a comprehensive SMTP mail server supporting POP3, IMAP, and even Web mail clients thanks to its new FortiMail 4.0 MR2 OS. Fortinet says the product is ideal for SaaS and application service providers with PCI DSS or HIPAA regulation compliance obligations. There's DLP, anti-spam, antivirus, and antispyware onboard, along with identity-based encryption for both push and pull delivery.

- Can sort 1.2 million emails per hour with FortiGuard Antispam and Antivirus
- 2TB of built-in RAID 1/5/10/50 storage; upgradable to 6TB
- Supports up to 50,000 users and 5,000 domains
- Dual Gigabit fiber (SFP) interfaces and four Gigabit copper ports

**Best For:** Medium-sized to large enterprises, carriers, and service providers.

**Price:** \$29,995

## SonicWALL Comprehensive Anti-spam Service



The SonicWALL CASS (Comprehensive Anti-spam Service) can be deployed over existing SonicWALL TZ, NSA, and NSA E-Class appliances running Sonic-OS 5.6.3 or later. It protects SMBs with inbound anti-spam, anti-phishing, and anti-malware technology, plus advanced sender IP reputation analysis, cloud-based content management, denial of service prevention, full quarantine, and customizable junk summaries by user. CASS outperforms RBL filtering, the company says, offering 98% effectiveness against spam. After blocking 80% of junk email at the gateway, the service then applies Adversarial Bayesian filtering on the remaining messages.

- Easy activation and configuration
- No MX record redirection necessary
- Features GRID Anti-Virus
- Interoperable with other email security systems
- Varied options for the routing of junk messages

**Best For:** Small to medium-sized businesses looking for email security that's easy to deploy and administer.

## Vircom m150



The Vircom m150 antivirus and antispam device can extend its coverage to up to 2,500 users and unlimited domains. It is capable of working with network loads of up to 5 million messages on a given day. The m150 is powered by Windows 2003 Server with SQL Server 2005 Express, along with modusGate antivirus software. It's optimized for connectivity with Exchange Server 2003/2007/2010.

- Sequential Content Analyzer predictive technology stops zero-day attacks
- Intel Core 2 Duo processor
- RAID 1 storage drive mirroring
- Optional dual antivirus add-on
- Add-on option provides DLP and policy management

**Best For:** Midsized businesses, small to medium-sized ISPs, hosting and mail service providers.

**Price:** Starts at \$5,045, including Windows Server license and 50-user Vircom modusGate software license.

## Vircom mBlade



Big organizations have big needs when it comes to anti-malware protection. The Vircom mBlade provides both speed and capacity in this role, along with inbound and outbound email scanning, spam filtering, and power redundancy. The mBlade can handle up to 15,000 user mailboxes and any number of email domains. It's a turnkey system for high-volume, heavy security environments.

- Throughput of up to 17 million messages per day
- modusGate antivirus protection onboard
- Four Gigabit Ethernet ports
- Dual Intel Xeon 5130 dual-core processors
- RAID 5 data protection with 15,000rpm hard drive performance

**Best For:** Corporations, large enterprises, carriers, ISPs, hosting and mail service providers, and large universities.

**Price:** Starts at \$22,950, including Windows Server license and 50-user Vircom modusGate software license

Do you  
have a  
**NEW**  
**PRODUCT**  
that data  
center and  
IT managers  
would be  
interested  
in learning  
about?

Send your  
press release  
or related  
product information to  
press@processor.com.



Customers Want Unlimited Data Plans

Although some service providers may not be offering unlimited data plans anymore, a recent study from Sanford Bernstein found that customers do want those plans, whether or not the limited data plan costs less. The Sanford Bernstein study indicates that unlimited data plans could become a way for some mobile phone providers to differentiate themselves from competing service providers that have moved to a usage-based pricing system. The study also found that even if customers don't typically surpass the limit, they would be willing to pay for a more costly plan to avoid having to pay overage fees.

Cisco To Buy LineSider

Network services virtualization platform vendor LineSider Technologies of Danvers, Mass., is a partner of Cisco on both technology and in the channel. Now the network management software firm is slated to become Cisco's latest acquisition. LineSider, known for its OverDrive platform, is expected to help Cisco move deeper into cloud computing. LineSider's network abstraction layer and policy-based, predetermined service settings assist clients in accelerating the provision of cloud assets as needed. The deal should close in Cisco's second fiscal quarter of next year.



App Looks Into Facebook Malware

About 20% of Facebook users are exposed to posts with malicious content that can result in the user's account being hijacked, potentially leading to the malware link automatically being posted on the walls of the user's respective friends. The finding was made by BitDefender using Safego, a Facebook application that lets users monitor their PC's vulnerability to malware. The Safego app analyzed the news feeds of more than 14,000 Facebook users and found that more than 60% of the attacks come from notifications from a malicious third-party application. A high proportion of attacks come from Facebook applications that claim to perform a function that Facebook normally prohibits, such as seeing who has viewed your profile.

Household Income, Tech Use Connected

A new survey from the Pew Research Center's Internet & American Life Project has determined that household income does indeed have a correlation to tech ownership and use among Americans. The survey found that 95% of American households that earn \$75,000 or more a year use the Internet at least occasionally, and in this income bracket, 93% have high-speed Internet. Of those American households that earn less than \$75,000 a year, 70% access the Internet at least occasionally and 85% have high-speed Internet. About 57% of households with annual income less than \$30,000 tend to occasionally access the Internet. Pew also determined that higher-income households are more likely to have desktop PCs (79%) and laptop PCs (79%), as well as iPods, game consoles, e-readers, and tablets. Among lower-income households, 55% have desktop PCs and 47% have laptops.

# Tips For PCI DSS Compliance

Compliance Is Important, But So Is Security

by John Brandon

WHAT IF THIS happened to you? Your company has just completed a massive technology and security infrastructure upgrade to make sure your financial transactions are safe. You inspected the PCI DSS rules and checked them off on a list. Your CEO is happy that you spent the due diligence in complying with the federal regulations on credit card processing. And then the worst happens: A hacker breaks into a server and steals every credit card number from your customer base, and you end up on the local news explaining why. "That is the nightmare scenario," says John Ramsey, senior product manager with MegaPath ([www.megapath.com](http://www.megapath.com)), who explains that the horror stories about breaking into the Heartland credit card system and the TJ Maxx breach involved an understanding that these companies were compliant with PCI, but were not as secure as they thought they were. "This can cost hundreds of millions of dollars, fines from the credit card brands,

Key Points

- Look for gaps in the organization, not just in infrastructure, but in expertise of the staff, to make your data center secure.
- Perform a risk assessment on vulnerabilities to the organization, rather than just trying to meet compliance regulations for the PCI DSS mandates.
- Prioritize the most sensitive data and make sure those data stores are secure rather than implementing an all-encompassing security measure just for compliance.

compliant is to take a long, hard look at the capabilities of the organization. In some smaller companies, the massive scale of making your data secure requires expertise not often found in an SME. Gottlieb gives an example of one client who has a massive server farm for handling credit card transactions and focuses on making improvements in compliance for those servers. They had to look at how

“No one wants to use a credit card at an organization where the customer thinks they cannot protect their data, and it all mushrooms from that initial security breach.”

- MegaPath's John Ramsey

but also brand damage. No one wants to use a credit card at an organization where the customer thinks they cannot protect their data, and it all mushrooms from that initial security breach," says Ramsey. Thus, compliance and security go hand in hand. Here are some ways to make sure your enterprise can be both.

Make Sure You Are Compliant

The most important step in making sure you are PCI compliant is to run an assessment of the risk for a security breach and to monitor and log transactions thoroughly, says Joe Gottlieb, the CEO of SenSage ([www.sensage.com](http://www.sensage.com)). "A lot of companies are good at doing compliance, but not good at checking and monitoring," says Gottlieb. "To do this right, you have to gather a fair amount of data to monitor, and you have to isolate the signal from the noise. That means you are not just effective at compliance but improving security." Gottlieb says one of the best approaches to monitoring is to look at the gaps in the business—this can involve gaps in actual infrastructure, gaps in technical duties within the organization, and gaps in how the credit card data is stored and where it is stored. Another important step in making sure you are secure and not just merely

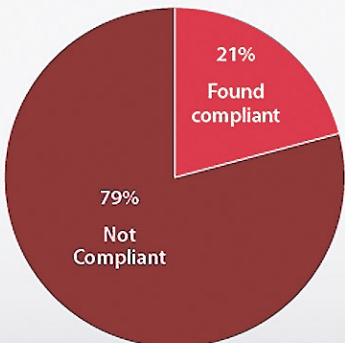
the data was tracked and monitored, but could not handle the task internally. Software that tracks possible breaches can look for behaviors on a network and possible entry points and assist IT managers in rooting them out. "Checking the box might improve the compliance effort, but we have moved away from good security," Gottlieb says. "We are now doing good compliance as an industry; it is now just a task in the job of the IT manager, but there is a subset of companies that still want to do good security." Gottlieb advises doing the hard work of gaining access to all of the data in an organization, finding out who owns that data, and then doing a triage to find out which data presents the highest risk. Gottlieb says the PCI rules follow this norm. It is OK to start with the most critical data, make sure that it is monitored and secure, and then move on to the lower subset of transactional data. Identify The Risks Part of the process of making sure your company is secure from breaches is in monitoring the data, but Ramsey says there should also be a risk assessment to find out where potential gaps exist. He says part of this assessment is in knowing where you fall on the PCI DSS spectrum. For example, some companies

might not ever even hold any transactional data locally (this includes e-commerce sites that use a third-party provider such as PayPal). Some fall into a higher category where you may not hold the data in your data center, but you do use applications that process the data and hold it temporarily. With PCI, the size of the organization and whether you are handling data locally determines the compliance rules. By understanding how you should comply, it's then possible to make plans to ensure compliance and institute measures to make sure the company is actually secure and not just obeying the regulation. "There has been a checklist mentality in the past," says Ramsey. "DSS 2.0 was released [at the] end of October, and the security council realized they were too focused on checking the box. The new method is to take a risk management approach to securing cardholder data and protecting the data. If you are storing data, that should be an immediate focal point for physical and procedural security." Ramsey says one of the major underlying issues with compliance vs. actual security prevention is that retailers who must comply with PCI DSS often operate under very low profit margins, so they lack the resources to deal with the security issues. They might try to stay compliant (to stay in business) but do not focus on staying secure. He says IT should instead shift dollars away from just the checklist and perform risk assessments on security to find out whether you are open to attack. In the end, vulnerability assessments, data monitoring, and security measures to look for breaches and gaps in infrastructure are much more important than just complying with the regulations. It can mean the difference between staying in business and staying out of the news. P

## Most Companies Are Not PCI Compliant

Among companies that consider their operations PCI compliant, only 21% were found to be truly compliant, according to a Verizon study. Companies should go beyond compliance and consider network monitoring tools and endpoint security measures that keep your data center safe from attack.

Figure 41. PCI DSS compliance status based on last assessment\*



\* Verizon caseload only



CLOUD TIPS & TRICKS

# Top Cloud Threats: For All Its Potential, Cloud Computing Is Not Without Risk

BY CARMi LEVY

**SECURITY AND DATA MANAGEMENT** should be especially top of mind when planning cloud-based projects. Unfortunately, many shops pursue this technology under the mistaken assumption that the cloud automatically resolves any existing vulnerabilities. Because the reality is somewhat more sobering, consider the following threats before transitioning infrastructure and applications into the cloud.

### Reduced Control Over Sensitive Data

Traditional IT infrastructure, with all hardware and software residing within the firewall, allows tight control over organizational secrets. As data migrates into the cloud, however, physical control on shared hardware becomes more difficult. To counter this, companies should classify data based on levels of sensitivity. Matt Jonkman, founder and CEO of Emerging Threats Pro (www.emergingthreatspro.com), says payroll, engineering, or email data is probably fine for integrating into the cloud.

“You might be embarrassed if these types of data are disclosed publicly, but it’s not something that’s going to destroy your business,” Jonkman says. “But core company secrets, like the formula for how you make the rubber for your tires, are probably not something you should keep in the cloud.”

### Service Outages & Data Loss

It doesn’t take a malicious attack to inflict damage to the bottom line. If the cloud goes down and contingency plans aren’t in place, business continuity could be affected. Jack Gold, president and principal analyst of J.Gold Associates, says giving employees the rest of the day off—as some early Salesforce.com users did whenever that service went down—isn’t a viable long-term strategy.

“What happens if your cloud-based data is unavailable or, worse, somehow destroyed?” he asks. “Have a backup strategy to make sure your most valuable asset is safe and fully retrievable.”

### Network Bottlenecks

Heavier reliance on network infrastructure to access cloud-based applications and data increases business risk when the network goes down. Gold says investment

in multiple forms of connectivity can pay off significantly.

“While networks are fairly robust, do make sure you have redundancy in your networks in case one access method goes down so you can use the backup and still access the cloud service,” Gold says.

### Cloud Provider Lock-In

Business risk grows as apps and data become more tightly woven to a particular cloud vendor.

“Make sure any cloud-based services you use are portable,” Gold says. “Be sure you can move to another provider if you need to. Is the service completely proprietary? If so, it’s unlikely to be an easy move in case the provider goes under or you find a better deal somewhere else.”

### Fellow Cloud-Based Infrastructure Users

Multiple companies sharing the same physical hardware in a shared cloud-based data center aren’t necessarily cause for immediate concern. But IT should still consider the unique risks posed.

“Eventually, there’s going to be some sort of exploit where somebody breaks out of their virtual host in the cloud and gains

access to the memory or file systems of other hosts,” Jonkman says. “It hasn’t been done yet, and I don’t want to say it’s something we need to be extremely concerned about, but if your information is extremely sensitive and it’s sitting on a cloud host, perhaps it shouldn’t be there.”

## Top Threat: Complacency

The biggest threats to robust cloud deployment originate from within. Existing weaknesses in security management won’t just evaporate as apps and data are moved into the cloud. How and where a system is hosted doesn’t fundamentally change the necessary security strategy.

“We still have the traditional security risks. Remember that you’re putting data on a server in a shared environment, and that’s the major risk,” says Matt Jonkman, founder and CEO of Emerging Threats Pro (www.emergingthreatspro.com), who adds that the usual security practices—encrypt all communications to and from the server, ensure the host is properly firewalled, and arrange offsite backups and business continuity—still apply.

# Attention Data Center Professionals

# Where do you go to find the newest products available?

## Check out each issue for ...

Articles with valuable product overviews and data.

Quick rundowns of new data center-related products.

New Product articles filled with in-depth information.

... then go to Processor.com and take advantage of our online search tools to find even more in-depth information!

# PROCESSOR

### 1 2009 Board OS Revenue Up: Overall Software Revenue Down

The good news concerning 2009 U.S. board software sales is that revenue from the retail OS category declined 50% from 2008's total, according to the NPD Group. The bad news is that, despite the increase, overall revenue of all software categories slipped 7% to \$2.4 billion in 2009, although the 7% slide is better than the 10% decrease in 2008. Overall, total volume sank 8% for 2009, while the ASP (average selling price) dipped 2%.

Other than OSes, the business category was the only other to see a gain in unit volume (4%), although that was due in part to a 45% drop in ASPs, keeping the category to take a 10% revenue hit. Only the OS category posted increases in both units (52%) and revenue (33%) for the year, spurred on by new OS releases from Microsoft and Apple during 2009's second half. Elsewhere, the France category dipped 12% in revenue and 14% in unit volume, the Imaging/Graphics category 16% and 4%, and Systems Utilities fell 6% and 4%. According to NPD, the outlook for 2010 calls for similar sales results, with the lack of new OS launches being offset by Office 2010's release.

### 2 Tech Reseller Sales On The Rebound

Technology sales to small and mid-sized enterprises gave any indication about the sector's financial health, a modest recovery may be underway. So says new data from the NPD Group's Reseller Tracking Service, which detailed that commercial resellers in the United States sold \$1.6 billion in tech goods in December, up about 7% over December 2009. Desktop computers posted the strongest revenue gains (40% annually), but notebooks kept the greatest increase in units shipped (42%) year over year. NPD believes that retail resellers provide being caught into SME spending behavior and thus into the overall fiscal situation in which small and mid-sized companies currently operate.

### 3 Apple Leads North American Mobile Market

Quarterly Mobile Market Report from ABI-Mark, which examines the top handsets and smartphones, found Apple had a 40% market share with 11% of units. Android grew steadily by 25% from quarter of Q3, but continued to trail Europe. In the U.S., the third quarter's total revenue for about 14% of the total revenue.

### 4 Report: Android In Mobile OS Share

If IDC's recent report that Google's Android is the most popular OS among mobile OSes will also be the best, India's E&S's Worldwide Mobile and Smartphone phone shipments at a CAGR (compound annual growth rate) of 20.5%. The report notes its top four areas in markets in Asia-Pacific, Latin America, Europe, and Africa. Android's share has grown to 13.4%, Linux and Symbian with 10.4% and 10.4%, respectively. IDC also notes that the Android market share will grow to 15.4% by 2011.

### 5 Watch The Stocks

Processor.com's Market Watch Report from ABI-Mark, which examines the top handsets and smartphones, found Apple had a 40% market share with 11% of units. Android grew steadily by 25% from quarter of Q3, but continued to trail Europe. In the U.S., the third quarter's total revenue for about 14% of the total revenue.

### CESSA CLARILINK-V CONTROLLERS

Clear, Robust VoIP

VoIP has become a must-have for businesses. It's a low-cost alternative to traditional long-distance phone service. This is especially true when you consider the fact that VoIP is a cloud-based service. It's not just a new technology, it's a new way of thinking about voice. It's a way to reduce costs, improve quality, and simplify your network. It's a way to make your business more efficient and more competitive. It's a way to make your business more successful.

CESSA's CLARILINK-V controllers are designed to make VoIP a reality. They are easy to install, easy to use, and easy to integrate with your existing network. They are also designed to provide the highest quality of service, so your customers can always hear you clearly. They are also designed to be secure, so your data is always protected. They are also designed to be scalable, so you can grow your business without having to worry about your network.

CESSA's CLARILINK-V controllers are the perfect solution for businesses that want to take advantage of VoIP. They are easy to install, easy to use, and easy to integrate with your existing network. They are also designed to provide the highest quality of service, so your customers can always hear you clearly. They are also designed to be secure, so your data is always protected. They are also designed to be scalable, so you can grow your business without having to worry about your network.

### PRODUCT RELEASES

The Processor Product Releases section includes brief overviews of data center products. All products listed have been released recently, so you can see the latest in the market and find products you need.

#### Active Directory

Microsoft's Active Directory is a directory service that provides a central location for storing and managing information about the objects in an organization. It is used to manage user accounts, group policies, and other resources. It is also used to manage the security of the network. It is a key component of Windows Server and is used by many other applications.

#### Microsoft SQL Server

Microsoft SQL Server is a relational database management system (RDBMS) that is used to store and manage data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange

Microsoft Exchange is a messaging and collaboration platform that is used to manage email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint

Microsoft SharePoint is a collaboration and document management platform that is used to manage documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics

Microsoft Dynamics is a business management platform that is used to manage sales, marketing, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office

Microsoft Office is a productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Windows

Microsoft Windows is an operating system that is used to manage the hardware and software of a computer. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Internet Explorer

Microsoft Internet Explorer is a web browser that is used to access the Internet. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Outlook

Microsoft Outlook is a personal information manager that is used to manage email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Access

Microsoft Access is a database management system (DBMS) that is used to store and manage data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Word

Microsoft Word is a word processing application that is used to create and edit documents. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Excel

Microsoft Excel is a spreadsheet application that is used to create and edit spreadsheets. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft PowerPoint

Microsoft PowerPoint is a presentation application that is used to create and edit presentations. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Project

Microsoft Project is a project management application that is used to create and edit project plans. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Visio

Microsoft Visio is a diagramming application that is used to create and edit diagrams. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneNote

Microsoft OneNote is a note-taking application that is used to create and edit notes. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Lync

Microsoft Lync is a collaboration application that is used to manage instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams

Microsoft Teams is a collaboration application that is used to manage instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer

Microsoft Yammer is a collaboration application that is used to manage instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype

Microsoft Skype is a collaboration application that is used to manage instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365

Microsoft Office 365 is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365

Microsoft Dynamics 365 is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online

Microsoft SharePoint Online is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online

Microsoft Exchange Online is a cloud-based messaging and collaboration platform that includes email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneDrive

Microsoft OneDrive is a cloud-based storage and file sharing platform that includes documents, photos, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams (New)

Microsoft Teams (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer (New)

Microsoft Yammer (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype (New)

Microsoft Skype (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365 (New)

Microsoft Office 365 (New) is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365 (New)

Microsoft Dynamics 365 (New) is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online (New)

Microsoft SharePoint Online (New) is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online (New)

Microsoft Exchange Online (New) is a cloud-based messaging and collaboration platform that includes email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneDrive (New)

Microsoft OneDrive (New) is a cloud-based storage and file sharing platform that includes documents, photos, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams (New) (New)

Microsoft Teams (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer (New) (New)

Microsoft Yammer (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype (New) (New)

Microsoft Skype (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365 (New) (New)

Microsoft Office 365 (New) (New) is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365 (New) (New)

Microsoft Dynamics 365 (New) (New) is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online (New) (New)

Microsoft SharePoint Online (New) (New) is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online (New) (New)

Microsoft Exchange Online (New) (New) is a cloud-based messaging and collaboration platform that includes email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneDrive (New) (New)

Microsoft OneDrive (New) (New) is a cloud-based storage and file sharing platform that includes documents, photos, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams (New) (New) (New)

Microsoft Teams (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer (New) (New) (New)

Microsoft Yammer (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype (New) (New) (New)

Microsoft Skype (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365 (New) (New) (New)

Microsoft Office 365 (New) (New) (New) is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365 (New) (New) (New)

Microsoft Dynamics 365 (New) (New) (New) is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online (New) (New) (New)

Microsoft SharePoint Online (New) (New) (New) is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online (New) (New) (New)

Microsoft Exchange Online (New) (New) (New) is a cloud-based messaging and collaboration platform that includes email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneDrive (New) (New) (New)

Microsoft OneDrive (New) (New) (New) is a cloud-based storage and file sharing platform that includes documents, photos, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams (New) (New) (New) (New)

Microsoft Teams (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer (New) (New) (New) (New)

Microsoft Yammer (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype (New) (New) (New) (New)

Microsoft Skype (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365 (New) (New) (New) (New)

Microsoft Office 365 (New) (New) (New) (New) is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365 (New) (New) (New) (New)

Microsoft Dynamics 365 (New) (New) (New) (New) is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online (New) (New) (New) (New)

Microsoft SharePoint Online (New) (New) (New) (New) is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online (New) (New) (New) (New)

Microsoft Exchange Online (New) (New) (New) (New) is a cloud-based messaging and collaboration platform that includes email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneDrive (New) (New) (New) (New)

Microsoft OneDrive (New) (New) (New) (New) is a cloud-based storage and file sharing platform that includes documents, photos, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams (New) (New) (New) (New) (New)

Microsoft Teams (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer (New) (New) (New) (New) (New)

Microsoft Yammer (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype (New) (New) (New) (New) (New)

Microsoft Skype (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365 (New) (New) (New) (New) (New)

Microsoft Office 365 (New) (New) (New) (New) (New) is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365 (New) (New) (New) (New) (New)

Microsoft Dynamics 365 (New) (New) (New) (New) (New) is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online (New) (New) (New) (New) (New)

Microsoft SharePoint Online (New) (New) (New) (New) (New) is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online (New) (New) (New) (New) (New)

Microsoft Exchange Online (New) (New) (New) (New) (New) is a cloud-based messaging and collaboration platform that includes email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneDrive (New) (New) (New) (New) (New)

Microsoft OneDrive (New) (New) (New) (New) (New) is a cloud-based storage and file sharing platform that includes documents, photos, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams (New) (New) (New) (New) (New) (New)

Microsoft Teams (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer (New) (New) (New) (New) (New) (New)

Microsoft Yammer (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype (New) (New) (New) (New) (New) (New)

Microsoft Skype (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365 (New) (New) (New) (New) (New) (New)

Microsoft Office 365 (New) (New) (New) (New) (New) (New) is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365 (New) (New) (New) (New) (New) (New)

Microsoft Dynamics 365 (New) (New) (New) (New) (New) (New) is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online (New) (New) (New) (New) (New) (New)

Microsoft SharePoint Online (New) (New) (New) (New) (New) (New) is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online (New) (New) (New) (New) (New) (New)

Microsoft Exchange Online (New) (New) (New) (New) (New) (New) is a cloud-based messaging and collaboration platform that includes email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneDrive (New) (New) (New) (New) (New) (New)

Microsoft OneDrive (New) (New) (New) (New) (New) (New) is a cloud-based storage and file sharing platform that includes documents, photos, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams (New) (New) (New) (New) (New) (New) (New)

Microsoft Teams (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer (New) (New) (New) (New) (New) (New) (New)

Microsoft Yammer (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype (New) (New) (New) (New) (New) (New) (New)

Microsoft Skype (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365 (New) (New) (New) (New) (New) (New) (New)

Microsoft Office 365 (New) (New) (New) (New) (New) (New) (New) is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365 (New) (New) (New) (New) (New) (New) (New)

Microsoft Dynamics 365 (New) (New) (New) (New) (New) (New) (New) is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online (New) (New) (New) (New) (New) (New) (New)

Microsoft SharePoint Online (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online (New) (New) (New) (New) (New) (New) (New)

Microsoft Exchange Online (New) (New) (New) (New) (New) (New) (New) is a cloud-based messaging and collaboration platform that includes email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneDrive (New) (New) (New) (New) (New) (New) (New)

Microsoft OneDrive (New) (New) (New) (New) (New) (New) (New) is a cloud-based storage and file sharing platform that includes documents, photos, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Teams (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Yammer (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Skype (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365 (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Office 365 (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365 (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Dynamics 365 (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft SharePoint Online (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Exchange Online (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based messaging and collaboration platform that includes email, calendars, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft OneDrive (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft OneDrive (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based storage and file sharing platform that includes documents, photos, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Teams (New) (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Teams (New) (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Yammer (New) (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Yammer (New) (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Skype (New) (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Skype (New) (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration application that includes instant messaging, voice, and video. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Office 365 (New) (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Office 365 (New) (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based productivity suite that includes Word, Excel, PowerPoint, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Dynamics 365 (New) (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Dynamics 365 (New) (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based business management platform that includes sales, marketing, and other applications. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft SharePoint Online (New) (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft SharePoint Online (New) (New) (New) (New) (New) (New) (New) (New) (New) is a cloud-based collaboration and document management platform that includes documents, workflows, and other data. It is a key component of the Microsoft .NET framework and is used by many other applications. It is a powerful tool for managing data and is used by many businesses.

#### Microsoft Exchange Online (New) (New) (New) (New) (New) (New) (New) (New) (New)

Microsoft Exchange Online (New) (New) (New) (New) (New) (New)



## Mobile Policies Cause Rifts Between Company Workers, IT Professionals

There's a disparity between mobile IT policies and their enforcement as well as the overall education of employees about such policies, according to a survey conducted for Cisco by InsightExpress. Some analysts don't see this as a surprise, however, because of the growing use of personal consumer devices at the office.

"When you boil it all the way down, IT professionals are tasked with preserving security standards and managing risk; employees are pushing the envelope in several ways—bringing consumer devices into the workplace and desiring more flexibility in how they utilize corporate network resources as work stretches into personal time and vice versa," says Marc Ryan, senior vice president and chief research officer at InsightExpress. "This is a pretty classic setup for a clash."

Ryan says that many employees want to use their own mobile devices for work-related tasks and that "consumerization is testing the limits of businesses' corporate policies" by trying to enforce workplace policies while allowing workers to have their devices available for personal use.

The survey, which consisted of 2,600 IT professionals and employees in more than a dozen countries, found that while 82% of companies have IT policies, nearly one-fourth of the people surveyed were unaware that such policies exist. About 23% of companies don't have an IT policy on device usage.

### What To Do

Employees want to have access to private and secured business networks for work while still being able to use their consumer devices recreationally, the survey found. Because of this, businesses may want to consider changing their existing mobile policies to accommodate these devices. The most important aspect is to clearly state what these policies are and explain why they are in place.

This is where Ryan sees the role of IT professionals changing in the coming years as use of consumer devices in the office continues to grow. "IT organizations are being asked to balance a mobile, distributed workforce with risk management and security," Ryan says. "While technology is important, IT may need to be more of an adviser and educator to end users as they connect to corporate resources outside the office. Defining appropriate policies and addressing various security threats will mitigate the risks associated with the growing use of devices and access from anywhere," he says.

by Josh Compton



# How Secure Are Mobile Apps?

The Short Answer: Not Very

by Brian Hodge

• • •

SMARTPHONES ARE, by now, an everyday tool for employees to do their jobs. Unfortunately, the repeated instances of spyware being found in mobile applications add another modern twist to the ancient story of the Trojan Horse.

Stolen data, leaked data, unsecure data . . . it's déjà vu all over again. "It's all the stuff companies went through when PCs came onboard," says Jack Gold, founder and principal analyst at J.Gold Associates. "We went through all this already, 15 or 20 years ago, but it's not that much different [now]."

Although the situation appears to have caught a lot of people off-guard, you and your company don't have to be among them.

### It's The Wild West Out There

With smartphones, it's shocking how easily one errant app, even one downloaded from a legitimate outlet, can compromise security.

"If I'm typing away and someone's got a keylogger going and it's sending SMS messages every time I hit a key, which has been shown to be possible, what does that mean if I'm an executive?" Gold asks.

The dangers don't necessarily stop there. In organizations covered by compliance

### Key Points

- With their general lack of security, smartphones are now where company PCs were 15 or 20 years ago.
- Any smartphone app that connects to your network server can pose a danger, so you may want to limit phone access to email and Wi-Fi.
- Smartphones that need network access should be covered by a policy that addresses white lists, app vetting, sandboxing, and more.

and transmit sensitive data, without necessarily being subject to the level of oversight IT has with network computers. If employee smartphones aren't locked down—and few devices apart from the BlackBerry can be entirely—then employees can install anything they want and you'll never know.

It isn't just the possibility of spyware sneaking onto the phone, either. According to David Wilson, director of IT Services with Vector CSP ([www.vectorcsp.com](http://www.vectorcsp.com)), any smartphone application that connects to your network server can pose a danger.

"Whether you run Windows, Linux, or Unix for your network, there are security

"Whether you run Windows, Linux, or Unix for your network, there are security protocols for a workstation to gain access. Allowing an application on a smartphone to bypass this allows anyone with access to that phone the ability to see your data."

- Vector CSP's David Wilson

regulations, unsecured data could create serious noncompliance problems.

Two factors are responsible for the situation:

1. The gold-rush mentality in the app market. Unlike serious productivity software, mobile apps are simple and cheap enough to treat as impulse purchases. The lure of quick profits has created a flood of cottage industries, where inexperienced programmers may leave security holes in their code.
2. App stores' lack of a thorough inspection that each app does only what it's supposed to do. Theoretically, there's nothing preventing an app developer from being a front for a criminal outfit using embedded spyware to harvest data.

### Reward vs. Risk

A smartphone is in the nerve-wracking position of potentially being able to access

protocols for a workstation to gain access," Wilson says. "Allowing an application on a smartphone to bypass this allows anyone with access to that phone the ability to see your data."

Vector CSP's solution is to completely bar smartphone access to its servers, allowing access only to its Exchange email system and Wi-Fi Internet.

"In my opinion, there is no corporate data that should be accessed via smartphone beyond email. Work should be confined to a secure workstation," Wilson says.

In companies where this could hinder the ability of sales staff and other outside employees to perform at 100%, it's crucial to make sure their phones are covered by a well-conceived policy.

### Policy Possibilities

Although there's no such thing as a one-size-fits-all policy for smartphones, here

are several important factors to consider when developing yours.

Educate users. Initiate a dialogue with employees about the security risks of smartphones and third-party apps and why whatever safeguards you've chosen are important to the company's health. Delegate the job to a diplomat. You don't want to breed resentment and rebels.

Create a white list of approved apps. "You can't do them all, obviously," Gold says. "But you can do 10 popular apps and say, 'We've checked them and they seem to be OK.'"


Require employees to submit downloaded apps before installation. "I don't see a problem with employees submitting an app to IT and waiting a day while it's checked out and vetted," says Wilson.

If your company furnishes smartphones, only use devices you can control or lock down. This may be driven by the nature of the business. Financial firms typically have stronger security needs than, say, real estate offices.

If your company allows employee-furnished phones, develop a strategy for their use. List specific things users can and cannot do with a particular model of phone.

Outfit phones with a third-party sandbox office client. "Users may not like that because it's not integrated with the Google calendar, the Android calendar, whatever," Gold says. "But it does try to build walls around your data, so that there isn't cross-pollination in a negative sense."

Finally, because the phone market changes so rapidly, Gold recommends reviewing your policy periodically and adjusting it accordingly.

"If you build a policy today and don't address it for two years, where are you?," he says. "You're six generations behind." 

## Are They Or Aren't They?

Opinions differ on whether or not smartphones can legitimately be classified as computers.

"Though smartphones and their apps are touted as mini-computers, they fall far short of actually being computers. They can't log in to a Windows domain," says Vector CSP's Director of IT Services David Wilson ([www.vectorcsp.com](http://www.vectorcsp.com)).

Jack Gold, of J.Gold Associates, takes the opposite view: "Companies need to look at these devices no longer as just phones. They're data access points, they're computers, they're input terminals."

Regardless of your position, what's ultimately important is that most smartphone users do regard them as computers, or at least computer surrogates, and you should treat them as such. Do this, and you'll be ahead of the game when smartphones inevitably become powerful enough to erase all doubts that they are indeed computers.



TECH IN-DEPTH

Key Points

- With hosted telephony, the corporate phone system is in the service provider's data center rather than in the corporate data center.
- Hosted telephony may present a slight increase in bandwidth usage but will generally not require expensive infrastructure changes.
- Managers should ensure that their corporate LANs and WANs can handle the increased load that voice traffic will bring to the network. Watch for excessive delays or bottlenecks that will degrade the quality of voice calls.

# Hosted Telephony

## Low-Hassle, Efficient Communication At A Good Price Point



BY CHRIS MACKINNON

*Just when you are getting over the novelty of the rotary dial phone, enterprise communication is becoming even more streamlined through hosted telephony. Also commonly referred to as “hosted PBX,” hosted telephony is making it less necessary for corporate IT departments to house, manage, and otherwise handle enterprise phone equipment and systems.*

■ THE CONCEPT

Robert Poe, chief analyst with VoIP Evolution ([www.voipevolution.com](http://www.voipevolution.com)), describes the concept of hosted telephony as “locating the corporate phone system in the service provider’s data center rather than in the corporate data center.” He explains, “The service provider owns and operates the equipment and software. The customer company simply pays a predictable monthly fee, typically per user or per extension.”

According to Adam Simpson, CTO at Easy Office Phone ([www.easyofficephone.com](http://www.easyofficephone.com)), the end user requires only a soft-phone at each seat and a high-speed Internet connection to make use of a comprehensive set of business phone features. “These features were previously only available with a typically expensive and complex installation of a physical onsite PBX,” Simpson says. “With a hosted PBX, the end-user requirements are greatly

simplified while all of the features of a traditional PBX are still made available.”

Jeff Gigoux, chief product officer at Ring Carrier ([www.ringcarrier.com](http://www.ringcarrier.com)), says hosted telephony has dramatically shifted the cost for monthly communications service downward. He says companies offering hosted telephony are providing incentives to minimize upfront costs, which is very attractive to small and mid-sized enterprises, and a key requirement for this market segment to transition to VoIP.

■ FAR-REACHING BENEFITS

One of the major technology transformations that hosted telephony brings is a complete breakdown of local, state, and country barriers to a communications system for companies of all sizes.

In regards to existing data centers, the impact will be limited to a relatively small increase in Internet bandwidth usage—about 87Kbps per call, Gigoux says. “In most cases, no major infrastructure changes will be required, although quality-of-service traffic prioritization may be advisable depending on end-user requirements,” he explains. “In regards to IT professionals, the technology represents a significant opportunity for additional sales and service avenues and benefits to end-user customers.” Gigoux says the technology has attained significant mainstream awareness and the demand for implementation will only grow.

Poe says that to prepare for the technology, IT and data center managers, depending on whether they already use IP as opposed to traditional phone systems in-house, may have to take steps to ensure that their corporate LANs and WANs can handle the increased load that voice traffic will put on their networks. Managers must also ensure that there are no excessive delays or bottlenecks in their networks that will degrade the quality of voice calls.

On the efficiency side of things, a hosted PBX implementation generally assumes Ethernet connections at each seat. “If these are already in place, rewiring is typically not needed,” Gigoux says. ■

## Gaining Popularity

According to Tomoko Shimizu, COO at Brekeke Software ([www.brekeke.com](http://www.brekeke.com)), there are many reasons hosted telephony is gathering so much attention:

- Recent, rapid growth in high-speed Internet access infrastructure
- Popularity of having employee at remote or home offices
- Minimized hiring and training of IT staff at company premises
- Availability of superior and up-to-date IP PBX features
- Increase in popularity and availability in cloud computing infrastructure

Magnext Ltd

7099 Huntley Rd, Suite 104  
Columbus, OH 43229

MAGNEXT

DATA BACKUP SOLUTIONS

NEW & REFURBISHED AUTOLOADERS & TAPE LIBRARIES  
UPGRADE PACKAGES FOR HIGHER PERFORMANCE & CAPACITY  
TAPE LIBRARY REPAIR SPECIALISTS - STOCK 1000'S OF PARTS

UPGRADE YOUR LIBRARY

LTO • DLT • SDLT  
9840 • 9940 • T10K

Magnext stocks tape drive  
modules for your tape library

Call for best pricing!

Committed to providing high-value, high-quality, products to the IT marketplace

Toll-free 888-NOW-TAPE

614-433-0011

www.magnext.com

info@magnext.com

CA\$H IN  
YOUR USED CELL PHONES

It PAYS!  
UP TO \$100  
FOR EACH PHONE

PaceButler

corporation

1-800-248-5360  
www.pacebutler.com

Some phones have no value. See current purchase price list  
for individual model prices at [www.pacebutler.com](http://www.pacebutler.com).

ITT

Information  
Technology  
Trading

Experience to find you the  
right technology solution.

AS/400 • RS/6000 • Sun Microsystems  
Storage • Tape Backup

(877) 715-3686 | [www.itechtrading.com](http://www.itechtrading.com)

Thanks to DMD, we  
don't have to sit on  
our old computer  
equipment anymore.

retrieve • refurbish • reuse • recycle • remarket

We Purchase:

Computers/Laptops  
Networking Equipment  
Power/Environmental  
Telecommunications  
Complete Data Centers  
Printers

We Offer:

Asset Tracking/Reporting  
Deinstallation/Packing/Transportation  
DOD Level Data Destruction  
Epa Recycling/Reuse  
Ongoing Support Plans  
Technology Refresh/Install Programs

At DMD Systems Recovery, we remove the headache from asset disposal. We can manage the whole process from deinstallation to asset remarketing. We worry about data destruction, EPA regulations, logistics, and insurance so that you don't have too. Don't tie up your resources or take chances with you data or environmental issues. Call DMD today.

DMD SYSTEMS RECOVERY, INC.

A Slightly Different Company™  
Toll Free: (877) 777-0651 Phone: (802) 307-0180 Fax: (802) 307-0181  
Internet: [www.dmdsystems.com](http://www.dmdsystems.com)

Providing QUALITY GOODS and SERVICES for Industry.  
Member of IFCDI, Better Business Bureau, Chamber of Commerce, HP Authorized,  
Member of NAD (National Association for Information Destruction, Inc.)

NAID

BBB

HP

dbg

Digital  
Brothers  
Group

770-931-7732  
Fax 770-931-9416  
[www.dbgweb.com](http://www.dbgweb.com)  
[salesp@dbgweb.com](mailto:salesp@dbgweb.com)

DEC-Compaq-Cisco-Sun-SGI

AlphaServer GS160 Model 16  
Base System for OpenVMS

• DY-160CG-AA  
• One Alpha 21264 Processor 1224 MHz  
• Four Quad Building Blocks  
• One 14-Slot PCI Shelf  
• OpenVMS Operating System License

ALSO AVAILABLE:  
• Additional 1224 MHz CPU w/SMP  
• Additional Memory  
• Additional PCI Shelves  
• Additional PCI Options

Call or  
E-Mail  
For Pricing

2 SYSTEMS IN STOCK!

Authorized **COMPAQ** Reseller

WE WILL BUY YOUR USED HARDWARE!

Pegasus Buys, Sells and Offers Depot Maintenance  
& Flat Rate Repair On:

Kronos Time Clocks, Flat Panels,  
POS & Symbol, HHP, PSC, Telxon,  
Metrologic, Barcoding Equip

We can supply any configuraton you  
need. If you have clocks installed and  
need a specific KOS version we can  
help you. Same is true on I/O Boards.

Specialize in 420G, 440B,  
460F, 480F, 551, and 4500's


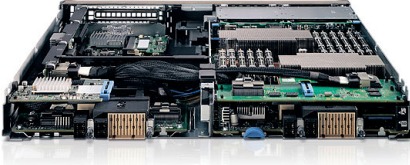
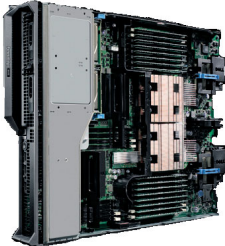
Ethernet Daughter Board, Modem Option,  
Remote Readers, Bell Relays, Master Sync,  
Battery Backup Kit, Dual Reader, I/O Board,  
External Reader I/O Board, Touch ID




PCM

Pegasus Computer Marketing, Inc.  
(800) 856-2111 | [www.pegasuscomputer.net](http://www.pegasuscomputer.net)



# Blade Servers

Product	<h2>Appro GPU Expansion Blades based on the Appro GreenBlade System</h2> 	<h2>Dell PowerEdge M610x</h2> 	<h2>Dell PowerEdge M805</h2> 
Description	<p>The GPU Expansion Blades from Appro are based on the company's GreenBlade System and are available in a 5U form factor. They're configured as a CPU/GPU combination supporting five dual CPU server blades with five dual GPU expansion blades per system. The system offers configuration flexibility, density, reliability, and energy efficiency with affordable mix-and-match compute blade options.</p> <ul style="list-style-type: none"><li>Two GPUs per blade server based on Nvidia Tesla M2050</li><li>Two CPUs per blade server based on AMD Opteron or Intel Xeon processors</li><li>Five blade servers per system total of 10 CPUs/10 GPUs in a 5U form factor</li><li>Up to 4,480 GPU cores per system</li><li>GPU power control capabilities for thermal management and power savings</li></ul> <p><b>Best For:</b> Energy, government research, university, finance, and bioinformatics institutions.</p>	<p>The PowerEdge M610x blade server from Dell can support up to two standard full-height and full-length PCI-E cards. The M610x comes with supplemental power and modular cooling with support for one 300-watt or two 250-watt cards.</p> <ul style="list-style-type: none"><li>Equipped with the Nvidia Tesla GPGPU card that can support 400 gigaflops of double-precision computations</li><li>Houses the Intel Xeon 5600 series processors in addition to 192GB of DDR3 memory</li><li>Features two embedded Broadcom NetXtreme II 5709 Gigabit Ethernet NICs with failover</li><li>Management tools include Dell Management Console, Altiris Deployment Solution, integrated Dell Remote Access Controller, and vMedia</li></ul> <p><b>Best For:</b> Data centers that require efficient application resources and consolidated management programs.</p> <p><b>Price:</b> Starts at \$3,005</p>	<p>The Dell PowerEdge M805 blade server offers highly available, fully redundant I/O and increased RAM capacity compared to previous models. Allowing for quick virtualization with storage cards for embedded hypervisors, the PowerEdge M805 blade server uses Rapid Virtualization Indexing for hardware-based management of virtual memory. The six-core AMD Opteron processors help boost interoperability, security, manageability, and energy efficiency.</p> <ul style="list-style-type: none"><li>Supports Microsoft SQL and Windows Server, in addition to Novell SUSE Linux Enterprise, Red Hat Enterprise, and Sun Solaris</li><li>Dell OpenManage software includes IT Assistant and 1:1 monitoring agents.</li><li>Integrated Dell Remote Access Controller supports out-of-band alerting, status, inventory, and troubleshooting via secure Web GUI</li></ul> <p><b>Best For:</b> Virtual environments that require high availability and solid all-around performance.</p> <p><b>Price:</b> Starts at \$2,209</p>

Product	<h2>HP ProLiant BL685c G7</h2> 	<h2>IBM BladeCenter PS700 Express Power7 Series</h2> 	<h2>NEC Express5800 SIGMABLADE B120a-d</h2> 
Description	<p>The HP ProLiant BL685c G7 features the latest AMD Opteron 6100 series processors, multicore scalability, and integrated HP Virtual Connect FlexFabric architecture, which helps simplify network connections and lower infrastructure costs. The HP ProLiant BL685c G7 server delivers twice the performance at prices starting at 30% lower than the previous generation.</p> <ul style="list-style-type: none"><li>Simplifies management and lowers infrastructure costs by converging LAN and SAN traffic over the same flexible connection</li><li>iLO3 (Integrated Lights-Out 3) Advanced technology helps simplify remote management</li><li>HP Insight Control software improves management productivity while reducing operational expenses</li></ul> <p><b>Best For:</b> Virtualization and compute-intensive database applications.</p> <p><b>Price:</b> Starts at \$9,869</p>	<p>Available in three configurations—the PS700, PS701, and PS702—the IBM BladeCenter Express Power7 Series is designed for 64-bit applications. The blades feature 64GB, 128GB, and 256GB memory options and use Intelligent Cache technology to maximize cache access to each core.</p> <ul style="list-style-type: none"><li>Consolidates on IBM BladeCenter Power Blades and virtualizes applications to better utilize resources and boost efficiency</li><li>Flexible configurations make it easy to implement the right system</li><li>Can simultaneously run AIX, IBM i, and Linux operating systems</li><li>Features an intelligent system design that includes multiple layers of redundancy and reliability combined with advanced availability tools to help you stay up and running</li></ul> <p><b>Best For:</b> Enterprises needing high-performance servers that are easy to deploy.</p> <p><b>Price:</b> Starts at \$7,088 (PS700), \$9,788 (PS701), or \$18,888 (PS702)</p>	<p>NEC's Express5800 SIGMABLADE two-socket blade server is built without any internal storage; it can boot from a virtualization SAN or with NEC AD106a attached storage. Key benefits include Intel Quick Path Interconnect technology for enhanced overall performance. The B120a-d's expanded I/O capabilities support up to six Gigabit ports and can manage more I/O bandwidth.</p> <ul style="list-style-type: none"><li>Features the Intel 5520 Chipset</li><li>Includes 12x DDR3-1066 Registered DIMM with 96GB max capacity</li><li>Comes with NEC EXPRESSCOPE Engine 2 server management software</li><li>Compatible with NEC H-Chassis and NEC M-Chassis</li><li>Integrated video memory</li></ul> <p><b>Best For:</b> Server environments where a SAN-based boot environment is best.</p>



Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Joanna Clay

## Egenera PAN Manager for Fujitsu BX900



The Egenera PAN Manager for Fujitsu BX900 is a unified computing system that simplifies IT infrastructure and reduces operational costs across both physical and virtual servers, all using industry-standard Fujitsu blades and standard Ethernet. The system reduces the overall I/O component count, simplifies how servers are configured, and reduces the complexity needed to provide mission-critical high availability and disaster recovery.

- Pod-style cloud infrastructures
- Features all-in-one virtual desktop environments
- Offers integrated N+1 high-availability blade failover and disaster recovery of both virtual and physical workloads
- Built-in I/O virtualization and converged networking is based on standard onboard Ethernet components
- Failover features eliminate the need for complex clustering software
- Rapid Re-Provisioning monitors fluctuating demands in order to repurpose compute, I/O, networking, and storage connectivity hardware

**Best For:** Companies seeking scale-out management and dynamic network consolidation.

**Price:** Starts at \$50,000

## Fujitsu PRIMERGY BX900



Fujitsu's PRIMERGY BX900 blade server is designed with various virtualized application scenarios in mind. The BX900's use of Fujitsu's Cool Safe cooling concept, 92% efficient power supplies, and ServerView Power Management software provides dynamic power and cooling. The server offers high availability, protecting against failure and providing automatic recovery. Within the common administrative/network domain, the BX900 blade server can scale up to 72 blades.

- Includes the latest Intel Xeon 5500 processor with up to 96GB of memory
- 18 half-height blades in 10U chassis
- Up to eight I/O connection blades featuring Gigabit, 10Gb, Fibre Channel, and InfiniBand
- Up to six storage blades with 1.2TB of direct-attached storage each

**Best For:** Data centers that would benefit from a dynamic server infrastructure in one cost-effective chassis.

**Price:** Starts at \$11,459 (unit price includes two server nodes)

## HP ProLiant BL2x220c G7



The HP ProLiant BL2x220c G7 server is designed for high-performance and scale-out computing environments where compute density matters. Integrating the latest Intel Xeon 5600 processor technology with server management technologies such as HP Insight Control, the HP ProLiant BL2x220c G7 offers a balanced systems architecture that enables clients to maximize server performance for virtualization, business intelligence, and database workloads.

- Combines two server nodes in one blade chassis to optimize compute performance
- Features embedded Mellanox QDR InfiniBand and Flex-10 networking functionality that provides 20 times more bandwidth and two times the performance per rack of other blades
- Simplifies server setup and power and thermal optimization
- Embedded system health monitoring lowers administration costs with iLO3 (Integrated Lights-Out 3) Advanced technology
- HP Insight Control software helps improve management productivity while reducing operational expenses

**Best For:** High-performance computing, grid, and scale-out environments where jobs are distributed across a large number of nodes.

**Price:** Starts at \$11,459 (unit price includes two server nodes)

## NEC Express5800 SIGMABLADE/B140a-T

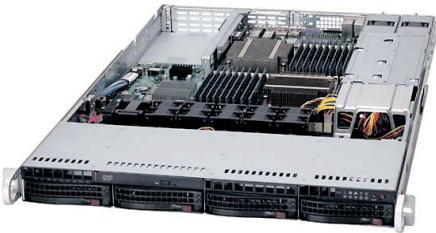


With four-socket support and 16-core processing, the NEC Express5800 SIGMABLADE B140a-T blade server is designed for longevity. The B140a-T can efficiently run standard applications, clustered applications, databases, and hypervisor platform solutions. The server is designed for virtualization and comes with 128GB memory capacity and expanded I/O Gigabit and Fibre Channel bandwidth. In addition, it's compatible with high-availability software and includes integrated system management features.

- Shared server components mean reduced overall power consumption
- Intel 7000-series four-socket Xeon processors offer high throughput
- Up to six I/O Gigabit ports plus two Fibre Channel ports
- ExpressBuilder software manages configuration and OS installation

**Best For:** Data centers interested in integrated system management through a virtualized environment.

## Supermicro SuperServer 6016T-6RFT+



The SuperServer 6016T-6RFT+ is a powerful iteration of Supermicro's 1U rackmount UIO servers. The 6016T-6RFT+ offers high-performance and green computing features such as increased memory capacity of up to 192GB in 18 DIMM slots, redundant Gold Level (93%+) power supplies, onboard 6Gbps SAS with hardware RAID 5, dual 10Gb Ethernet LAN, and integrated IPMI 2.0 management. Leveraging a variety of UIO adapters, Supermicro UIO systems can significantly improve network throughput as well as application performance.

- LSI 2108 8-port 6Gbps SAS with hardware RAID 5
- Dual 10Gb Ethernet LAN with 2x SFP+ connectors
- IPMI 2.0 with virtual media and KVM-over-LAN support

**Best For:** Enterprise mission-critical applications, data centers, and HPC clusters that require high-performance, high-density, and fault-tolerant storage solutions.

**Price:** Starts at \$1,800

**Contact:** (408) 503-8000 | www.supermicro.com

## Supermicro SuperBlade TwinBlade



As the newest addition to Supermicro's SuperBlade family, the innovative TwinBlade doubles the number of dual-processor compute nodes per 7U enclosure to 20, allowing for up to 120 DP servers per 42U rack for a dense, cost-effective solution. Based on the SBI-7226T-T2 blade supporting the latest Intel Xeon 5600 Series processors, this system delivers unprecedented performance per dollar and per square foot. Available with dual 40Gbps QDR InfiniBand switches, this blade solution features industry-leading 94% power supply efficiency.

- 20 DP (Intel Westmere and AMD G34) nodes in a 7U enclosure
- 128GB ECC-registered DDR3 per DP node
- Dual 40Gb InfiniBand, 10GbE, and 8Gb FCoE switches
- Dual 1/10Gb Layer 2/3 Ethernet switches
- Centralized remote management via IPMI 2.0 or KVM over IP

**Best For:** High-performance computing in data center, enterprise, and cloud computing deployments.

**Contact:** (408) 503-8000 | www.supermicro.com



### EU Opens Antitrust Investigation Of Google

The European Commission began an investigation into Google’s search results practices following complaints that the company is giving preferential treatment to its own services and lowering results from competing search providers. The antitrust investigation will center on allegations surrounding rankings and preferential treatment, quality score adjustment of sponsored advertising, unfair advertising obligations, and restricted data portability. U.S. authorities have not opened a formal investigation; however, the company faces separate antitrust inquiries in Germany, Italy, and France. According to ComScore, Google maintains 80% of the European online search market compared to 66% in the United States. The commission has no proof of wrongdoing at this time.



### Connectivity Provider Mellanox Acquires Voltaire

A \$218 million deal that is expected to finalize in the first quarter of next year will see Mellanox Technologies acquire Voltaire. Both companies operate offices in the United States and Israel. Mellanox provides various connectivity solutions for servers and storage systems. Voltaire is a provider of “scale-out data center fabrics.” Directors from both companies have approved the deal, according to Mellanox. Mellanox expects the acquisition to strengthen its position as an end-to-end connectivity solutions provider for global data center server and storage markets. Both companies’ existing product lines will be retained and converged into future product generations. Mellanox says it expects to “achieve additional scale to permit it to operate as a larger, more successful, and more profitable enterprise.”

### Motorola To Split Company In January

Motorola’s board of directors approved a move in early December to split the company into two separate, publicly traded companies, including a consumer-targeted side and professional business side, effective Jan. 4. Following the move, Motorola Mobility will handle consumer-related business, while Motorola Solutions will handle professional business. Shareholders will receive shares in each business. Plans for the split originally surfaced in 2008 but were delayed because of the economic downturn. In a related part of the split, Motorola plans to sell its division that produces network equipment for cell phone providers to Nokia Siemens Networks in a deal expected to finalize by year’s end. Motorola Mobility will reportedly be based in Libertyville, Ill., but could later move to the West Coast or Austin, Texas. Motorola Solutions will reportedly still be based out of Schaumburg, Ill.

### Google Scheduled To Open Two More Data Centers Next Year

Google is building two new data centers that it plans to open in late 2011. They are being built in Goose Creek, S.C., and Lenoir, N.C. Google is also continuing work on its Pryor, Okla., facility. As Google has grown in popularity and expanded its market share and reach, it has increased IT spending to keep up. Google cited a need for energy, land, and available workforce as primary reasons for expanding its data centers into these locations.

# Blade Systems Update & I/O Options

Complete Systems Support High-Speed, Multiprotocol, Converged Networks

by Kurt Marko  
• • •

IN IT’S HIGHLY COMPRESSED time scale, blade servers are an old concept with renewed interest as vendors see them as much more than just exercises in packaging, but rather as complete systems where the synergies of integration mean the whole is greater than the sum of parts. Unlike their predecessors, which resembled nothing more than sawed-off rack-mount motherboards with a shared power supply and chassis, today’s blades are more like the mainframes of the virtualization

## Key Points

- Blade servers have reached performance parity with their standalone cousins, offering the same mix of CPU choice and memory capacity as conventional rack-mounted servers.
- Networking flexibility is the area where blades really shine, featuring new virtual I/O interfaces with multiprotocol LAN and SAN support and the ability to centrally manage, via software, the links between servers (even VMs) and external switch ports.
- The industry hasn’t standardized a way for providing such network versatility, with two competing architectures; one based on a new generation of multiprotocol switch modules and another using special-purpose fabrics to mainline low-latency connections from external switches directly into the blade backplane.

era. They have hot-pluggable server boards, versatile I/O modules, and sophisticated power management glued together with integrated management tools. With capacity to spare, virtualization is everywhere, where everything from processors to network interfaces can be sliced and diced into virtualized instances tailor-made to the workloads.

Like their standalone cousins, blades continuously push the performance envelope with the latest CPUs and server chipsets. And the interesting thing about blade designs isn’t with their speeds, but rather their feeds, because faster, more flexible I/O modules promise to eliminate the traditional banes of blade designs, I/O bottlenecks and port proliferation. Passé are the simple pass-through connectors that acted as little more than internal patch panels. Even basic Layer 3 switching modules are losing favor as vendors discover the flaws of layering another tier to the network switch topology and the difficulty of sharing physical NICs across multiple VMs. Instead, blades feature a new generation of virtualizable, software-configurable blade switches or, alternatively, switch fabric extension modules.

Management tools have likewise evolved, treating blades not as discrete machines but as integrated systems, allowing multiple chassis (not just multiple servers within a chassis) to be administered

in unison, while automating the deployment of standard system configurations.

## Server Hardware

The basic technology inside a server blade closely mirrors that of pizza box 1-2U designs. Historically, discrete servers have led the market with the latest CPUs and motherboard features; however, the gap has all but been eliminated. Although x86 systems dominate the server market, and blades are no exception, for those still running RISC servers, blade versions of RISC hardware are still available.

Mirroring the standalone server market, most blades are either two- or four-socket designs, depending on module size (half vs. full). Although most still sport quad-core silicon, the next generation of processors will bump the core count to as many as 10 or 12. Memory support from the standard Northbridge controllers allows for as much as 128MB on a 16-socket board. Even using pedestrian quad-core processors and commodity 4GB memory modules, the typical 16-slot chassis packs an impressive processing punch, making blades an ideal platform for virtual servers.

## Network Options

Despite such dramatic gains in server capacity, the real innovation in blade designs has been on the I/O front. Until recently, the blade chassis’ shared backplane has been an untapped resource for moving data in and out of servers. This is no more as every major vendor has developed I/O architectures featuring interfaces that deliver virtualizable, high-speed, multiprotocol connections. These hold the promise of both increased performance and flexibility, yet they were born more out of necessity than genius.

All vendors offer some form of I/O virtualization to break the link between connections and associated configuration information and specific blade modules, meaning that physical changes to the blade or its upstream network configuration are transparent to the underlying OS or VM. According to Burton Group analyst Nik Simpson, “Vendors are making a virtue out of a necessity with blade systems; complex relations between shared I/O modules and blade slots makes virtualizing the connection information vital if the blades are to be managed effectively.”

Vendors have converged on two competing and quite different I/O architectures. The more evolutionary approach builds on the traditional embedded blade switch architecture with a new generation of converged, multiprotocol NICs and switch modules that support high-speed LAN (10Gb Ethernet) and SAN (4Gb FC) interfaces. Typically, a pair of server NICs (sometimes known as mezzanine cards) communicates at 10Gb to a multiprotocol switching module, which supports all blades in the chassis. The switch usually has eight uplink ports that you can mix and match between Ethernet or Fibre Channel (both FCoE and native), which

link respectively into the data center’s LAN and SAN switching fabric.

An alternative network scheme does away with blade switches entirely in favor of a high-speed fabric interconnect between the chassis midplane and an external switch. In this scenario, no switching occurs within a chassis, even from one blade to another; all traffic passes through the external device. Connectivity between the chassis and switch varies but is usually via one of three protocols: two or more trunked 10GbE links, a 20Gbps or 40Gbps InfiniBand circuit, or a proprietary 40Gbps protocol. The external switch can virtualize isolated LAN and SAN connections to individual blades that appear to the server OS as dedicated NIC or HBA ports.

The advantages of an external fabric are a simpler, flatter network topology, easier network management (because the blade’s virtual ports appear as normal network ports to the management console), and potentially greater scalability (because the external switch has multiple fabric links supporting many blade chassis).

## Advantages Are Plenty, But They Will Cost You

Today’s blades offer unparalleled density and network flexibility without the traditional performance tradeoffs in comparison to standalone servers. They are ideal for consolidated virtual server farms and converged 10GbE storage and data networks. Their new energy-saving features, such as components that can automatically throttle back in response to environmental conditions and server workload, are a good match for facilities on a tight energy budget. Unfortunately, these advantages aren’t free. Server blades are typically 10 to 20% more expensive than their 1U counterparts. Factor in the cost of a chassis, even apportioned across 16 blades, and the differential can reach 50% or more. [E]

## Local Storage

Although virtualization has pushed most installations to shared, external arrays, you can outfit blades with internal drives. Half-size server blades usually support two small form factor (2.5-inch SFF) drives, while some vendors offer dedicated drive blades typically sporting six to eight SFF drives per half-size slot. Such an all-in-one design may appeal to SMEs seeking to build a virtual data center in a single cabinet, but this poses a few problems according to Nik Simpson, analyst for Burton Group. First, drives consume power and generate more heat, compounding the already challenging power and cooling demands of high-density blades. Second, any drive expansion modules used to get extra capacity displace a processing blade, thus reducing compute density of the chassis. Thus, most large enterprises should stick with an external NAS or SAN.



# Feds Meet Facebook

## The Government-Citizen Social Media Connection

by Bridget Mintz Testa

ALTHOUGH IT MIGHT SEEM that government agencies at all levels in the United States have been slow to adopt social media, that’s not necessarily true. And where it is true, there are good reasons.

“Government hasn’t been any slower [at adopting social media] than private industry,” says Steve Radick, a lead associate with Booz Allen Hamilton’s (www.boozallen.com) social media and government 2.0 practice. “[The Government has] had some early adopters, just as in private industry.”

Although we don’t think of email as social media, Bill Clinton’s use of it for his 1991-1992 presidential campaign “was remarkable,” says Geoffrey Bock, a senior analyst in collaboration and social media at Gilbane Group (gilbane.com). “When Clinton came in, he made sure that every agency would have a Web site.”

By the end of the Bush administration, the federal government was looking into Twitter and Facebook. When President

new administration comes in . . . so it’s hard to make long-term commitments.”

The government also faces many legal restrictions on any type of data concerning individuals. “The government can’t collect personally identifiable information, so what does a government agency do if someone posts this information?” Radick asks. In addition, “The Federal Records Act requires that all records of public interaction must be stored for a certain time,” Radick says. “Do Twitter, a blog comment, or a Facebook post count? If so, how do we log that and record it?”

Another barrier was a prohibition on government sites collecting cookies of any kind. Now, Radick says, new policies specify that sites can collect some types of cookies, but not others.

Furthermore, terms of service for online companies require that any legal actions be addressed in court systems local or convenient to the provider. However, “if the government needs to sue, it must do so in federal courts,” Radick says. So government repre-

“An issue facing government agencies is trying to figure out the appropriate uses of social media that will let them carry out their mission.”

- Gilbane Group’s Geoffrey Bock

Obama arrived in 2008, “his IT policy was to make government more open, transparent, and responsive,” Bock says. That’s when the Gov 2.0 initiative began, which gave a push to using social media.

### Social Media’s Government Hurdles

For government agencies at any level, though, using social media is not a simple case of signing up for a Facebook account. “The government faces unique challenges,” Radick says. “There’s no profit incentive, so you are relying much more on intrinsic motivation. The government also must deal with the revolving door. Every four years a

sentatives can’t legally click to agree with those pop-up terms of service contracts every provider requires before letting you on its site.

### Breaking Barriers

Until the Obama administration’s Open Government Initiative, there was little motivation for middle managers in government to adopt social media. However, the younger generation grew up with it. “Middle managers have the most to lose,” says Radick. “They must get the work done [and] meet deadlines and milestones. They can’t waste two days to learn about wikis and social media.” The transparency initiative signaled that it was OK to take those two days and explore the potential.

When we speak of “the” federal government, it makes it sound like it’s one organization, which it’s not. “The federal government is a very large segment of the economy,” Bock says. “There are thousands of agencies with their own regulations and rules. An issue facing government agencies is trying to figure out the appropriate uses of social media that will let them carry out their mission.”

It’s easy to see how blogs created by branches of the military to persuade people to join meets those organizations’ missions, for example. But, it might not be so easy to see how a little-known agency, such as the U.S. Board on Geographic Names, could make good use of social media. Yet, the increasing number of state, federal, and local government departments and agencies with social media presences show that these organizations are figuring out how to do it.

Other, more tangible events have also helped broaden government adoption of social media. Persuading big online

### Key Points

- Government has been experimenting with social media for some time, but legal and other obstacles have prevented it from extensive participation.
- Barriers to government use of social media have been broken down through the Open Government Initiative, increased understanding by managers of how these tools can further their missions, and the development of appropriate terms of service by companies in the industry.
- Social media offers government agencies new ways to directly connect with constituents, obtain feedback, and eliminate red tape and bureaucracy.

companies to offer government terms of service was huge. The General Services Administration, one of the largest and most important federal agencies, led the way by successfully negotiating terms of service with 21 new media providers, including YouTube, Facebook, and MySpace, by July 2009. Since then, many other government agencies have created their own terms of service agreements with social media companies. “The terms of

service is the first piece to allow the government to use social media,” says Scott Burns, CEO and co-founder of GovDelivery.com, a company that provides local, state, and federal government entities with hosted, integrated digital communications solutions.

### What’s Next?

At various speeds, government agencies are seeing the benefits of social media. “It’s a way to get real-time feedback . . . an organization can quickly learn how their services are being delivered. It’s a way to push innovative ideas and concepts,” Burns says.

Burns believes that there’s still a bit of a learning curve, though. “The government focuses on “we-government,” where everyone votes on things online,” he says. “Most people are interested in ‘me-government’—their wallets, health, recreation, children, and time.”

It’s also a way to make it easier for people to connect directly with government. “I see it as tearing down pre-existing walls, red tape, and processes,” Radick says. “We can now better connect with the people who represent us. It makes government more engaging.”

Where Bock sees the biggest use of social media by government is in wikis. “There could be government-sponsored wikis with important information in them, and people can comment,” he says. “They could be used in a rule-making process, [where people comment on] the limitations of the rules and regulations and in the drafting of them.” Wikis could also be used to create authoritative catalogs of rules and regulations.

Does government really need to use social media? “Social media is where people are, and government should be there where it makes sense to their mission,” Burns says. ■

## GIADA N20 ION2 MINI PC

NEW PRODUCT

by Kris Glaser Brambila

### Tiny PC, Huge Potential

IT IS SAID THAT good things come in small packages, and in the case of Giada’s N20 ION2 Mini PC, it’s true. The entire computer may only measure 6.3 x 6.9 x 0.9 inches (HxWxD) and weigh 1.5 pounds, but it’s chock-full of features that will keep your office running smoothly and efficiently while saving precious space on each desk.

Multitasking through the day’s responsibilities is simple with the N20 ION2’s low-power, dual-core 1.8GHz Intel Atom D525 or 1.66GHz D510 processor and up to 4GB of DDR2 memory. The PC also sports the Intel NM10 express chipset and integrated Nvidia ION2 GT218 graphics with 512MB of onboard RAM. There’s lots of local storage with a 320GB hard drive. Additional storage up to 1TB is available as well as an SSD up to 240GB.

In addition to space-saving benefits, the N20 ION2 also reduces noise because of its quiet operation of 26 to 28dB. The N20 ION2 features Gigabit LAN, 802.11n Wi-Fi, and Bluetooth connectivity options. And despite its small size, it has all of the



#### Giada N20 ION2 Mini PC

A powerful mini PC that features a dual-core Atom D525 or D510 processor, Nvidia ION2 graphics, and quiet operation.

most-needed ports, including two USB 2.0, one USB 2.0/eSATA combo, one HDMI, one VGA, one SPDIF-out, an analog speaker-out and mic-in, and an SD/MMC/MS/MS Pro card reader.

Included with the mini PC is a remote that lets users turn the machine on and off. The N20 ION2 is available in either black or white and uses a DC19V external power supply



(415) 202-5441

www.giadapc.com



# Mobile Phone Recycling

Find A Reputable Electronics Recycler

by Jean Thilmany  
• • •

WITH MORE ENTERPRISES providing Black-Berrys, iPhones, and other mobile phones and devices to enterprise employees, disposal of those phones becomes an issue. Data center and IT managers need to ensure their enterprise is disposing of mobile devices in the most environmentally friendly manner possible, not only because it’s the right thing to do, but because 23 states and several cities have enacted electronics waste laws that dictate electronics disposal methods, says Ken Beyer, CEO at e-waste disposal company Cloudblue ([www.cloudblue.com](http://www.cloudblue.com)).

In July, for example, New York passed an e-waste recycling law that requires electronics manufacturers to recycle electronics amounts proportional to what they produce, based on a three-year sales average. Like many e-waste laws, it also makes it illegal for New Yorkers to dispose of electronics in landfills. IT managers need to ensure

their disposal and recycling methods adhere to the letter of the law for all states in which the devices are disposed, Beyer says.

Data is an equally important consideration for IT managers when it comes to mobile device disposal. They’ll need to make sure they’re not disposing of secure information along with the device, says John Shegerian, chairman and CEO at Electronic Recyclers International ([www.electronicrecyclers.com](http://www.electronicrecyclers.com)).

**Look For Certified Recyclers**

The easiest and most oft-used way for IT managers to safely dispose of mobile devices is to hire an electronics recycler that devotes its business to this form of recycling, sources say. Such recyclers are getting easier to find. But that doesn’t mean IT managers should sign a contract with just any recycler.

IT managers should look for a recycler certified by the e-Stewards Initiative, Cloudblue’s Beyer says. This is a project

Key Points

- Find an e-Stewards-certified electronics recycler; the certification ensures the recycler complies with all environmental mandates for electronics recycling.
- Ask for a potential recycler’s audited information on its downstream recycling partners. Inability to furnish this information is a bad sign when it comes to environmental compliance.
- Ensure a potential recycler has the ability to provide reports that document, by serial number, that it’s successfully wiped all devices. If a wipe fails, the device should be destroyed and the destruction also documented.

from BAN (Basel Action Network) of Seattle, which has created a certification program to assure electronics recycler conformance to a host of e-recycling best practices.

The e-Stewards Certification for electronics recyclers began in 2008, with the first certified e-Steward recyclers announced in early 2010, according to a BAN statement. The initiative’s Web site, [www.e-stewards.org](http://www.e-stewards.org), includes a list of certified recyclers. “This is the most comprehensive audit in e-waste industry,” Beyer says. “We need a standard in this industry and this is an emerging one.”

**Verify Insurance & Audit**

Shegerian also recommends asking whether a prospective electronics recycler carries liability insurance and, if so, how much. Recyclers should carry, at minimum, \$5 million in liability insurance. “Insurance is a sign they’re economically viable and will be here tomorrow to back up claims made today,” Shegerian says. “Some have no insurance or not enough insurance. But if any kind of security information is breached and somebody is going to get sued, most likely it’s going to be the recycler.”

He also recommends IT managers audit prospective recyclers if possible. A large enterprise might have the budget to hire a third-party auditor; a smaller enterprise can generally make a personal audit, Shegerian says. “It’s nice to read about somebody online, but when you send someone to a facility, you can tell if they’re doing things the right way or the wrong way,” Shegerian says.

Ask an electronics recycler for its own audit information for its downstream vendors. “Once recyclers break down electronics into plastic, glass, and metals, they have to be selling those to legitimate smelters,” he says. “The audit package will show where they’re sending their materials.” He adds, “If people don’t want to give access to that information, it means they’re not doing the right thing.”

**Security Counts**

In addition to being environmentally responsible, IT managers need to ensure their recyclers keep secure any data that

remains on the mobile device. Many recyclers issue reports that show, by serial number, that each device has been properly wiped and recycled.

“This is an audit trail that shows when and where the wipe happened. And if the wipe failed—sometimes they’re not successful, which means data is still on that device—the device should be shredded, and that also should be documented,” Beyer says. “Without this kind of evidence, a company could simply pull a SIM card and resell the phone.” Some recyclers also provide video backup that depicts the device being properly wiped.

After the wipe, electronics recyclers then usually demanufacture the phone, separating it into commodities such as the circuit board, plastic housing, and glass, which are then sent to refiners or smelters to be recycled into new products.

**Recycled Or Refurbished?**


Sometimes newer devices will be wiped, refurbished, and resold, Beyer says. A reputable recycler will share profits from these ventures with the enterprise that sent its devices for recycling, he adds.

A recycler that does refurbish cell phones or other devices is not an automatic security risk, says Hans Chung, co-founder of PlantMyPhone ([www.plantmyphone.com](http://www.plantmyphone.com)), which recycles cell phones to fund the planting of trees. “People get freaked out that the cell phone might get refurbished, but the truth is that recyclers want the cell phone data wiped clean more than the consumer does,” Chung says. “If the future owner buys a refurbished phone and it has someone else’s data on it, they won’t feel like they have a ‘like new’ phone, which is the whole point of buying refurbished. If a customer complaint like this gets to the carrier, they will easily drop that supplier.

“And most people’s data is not worth anything,” he adds. “It’s easier to steal someone’s bank passwords by using phishing tactics. People’s photos are worth nothing on the black market. And those phone numbers are worth as much as the free phonebook that gets dropped off at your door every year.”

**Pain-Free Delivery**

Enterprises needn’t worry too much about the costs or hassles of getting their devices to the recycler, says Andrea Bebirian, president and founder of Take My Mac ([www.takemymac.com](http://www.takemymac.com)). Most recyclers will pay postage to have smaller enterprises send used devices directly to that recycler. At larger enterprises, an electronic recycler will usually pick up a truckload of used devices and haul it to that recycler’s nearest facility, Beyer says.

So with a few simple rules in mind, signing on with a reputable electronics recycler can mean some cash back for the enterprise and valuable peace of mind. 

**Asset Management**

An asset management plan should be in place at all enterprises that offer mobile devices to employees, says Ken Beyer, chief executive officer at e-waste disposal company Cloudblue ([www.cloudblue.com](http://www.cloudblue.com)). If a phone disappears, it can’t be wiped and recycled. It may eventually be disposed of improperly, meaning fines for the enterprise and loss of confidential information. “A good asset management plan means when it’s time to go to disposal, an organization knows it’ll get its phones back from employees,” he says.

What are  
PROCESSOR &  
PROCESSOR.com  
all about?

Straightforward, easy-to-read information

Practical advice and tips to help you do your job

Product Showcases from new equipment manufacturers and resellers you can trust

The best used and refurbished equipment dealers

Being faster and simpler to use than today’s most popular online search tools

Dealers that can service or supply parts for older equipment

In-depth information on the most products and services imaginable

PROCESSOR.

It’s all about products, news, and information data center professionals can trust.



# Reuse Or Recycle: Which Is Best?

BY ROD SCHER

**IT’S NOT YOUR IMAGINATION:** The rate at which computer systems are becoming obsolete is indeed accelerating. According to a 2009 Arizona State University study, “Computer lifespan (purchase to ‘disposal’) decreased steadily from a mean of 10.7 years in 1985 to 5.5 years in 2000.” And that decrease continues to accelerate: A subsequent ASU study reports that the typical 2007 lifespan was only three years. One can only expect this lifespan to continue to shrink over time.

Given those numbers, if you’ve been in business for any length of time, you’ve already dealt with the question of how to deal with old equipment that your people are no longer able to use. Or perhaps you’ve just ignored the problem, and you wouldn’t be alone. According to the EPA, more than 80 million PCs became obsolete back in 1998; most of those computers are still in storage. Generally, you have three options: You can landfill the obsolete equipment, recycle it, or refurbish and reuse it.

The first option is simply not environmentally tenable. Although there are few federal laws relating to electronic waste, many states have mandated specific methods of disposal, and dumping equipment into a landfill is not among the recommended options. And besides, it’s simply wrong: E-waste contains heavy metals and other contaminants—dumping them into a landfill is, if nothing else, a form of environmental malpractice. And besides, you’re throwing away money: According to the EPA, two-thirds of the

computers thrown away in 2005 were still working.

### Viable Options

You’re really down to two sensible options: One is to recycle the equipment, sending it out to be broken down and the constituent parts sold to be reused in fashioning new equipment. And, in fact, there are efficiencies gained by recycling; certainly it’s more cost-effective (it does generate a revenue stream, after all) and environmentally sustainable than simply dumping equipment. Unfortunately, there is no guarantee that the recycling company will ensure that the job is done in a reputable fashion. In many cases, the equipment is sent to third-world countries where young children working in unsafe and unsanitary conditions pick the equipment apart and simply dump the unusable—and often toxic—materials.

The other option—refurbish and reuse—is the most efficient from an environmental perspective. It took a great deal of resources to build your



computer. According to Ramzy Kahhat Abedrabbo, one of the authors of the ASU studies, “You need an enormous amount of raw materials, energy, and water to produce a computer. Because the manufacturing process of a computer is very resource-intensive, about 80% of

the energy used over the life of the average PC is consumed before it is ever plugged in.” This means that when you toss a computer, you’re throwing away most of the resources that went into building it. When you recycle it, you’re regaining some of those resources, but very little—and you may be doing irreparable harm to the environment.

### Weigh The Benefits

According to IT researcher Jim Lynch, reusing computers is about 25 times more beneficial environmentally than recycling them. “Put another way,” says Morris Scott, president of DMD Systems Recovery ([www.dmdsystems.com](http://www.dmdsystems.com)), “the energy saved by reusing 1,000 computers would power 680 households for one year. Recycling the same number would power 27.5 households for a year. From an energy and resource standpoint, reuse of PCs and laptops is generally the most efficient method. Studies are still being conducted to see if this is true with servers and midrange computers.”

Both approaches yield environmental benefits, of course, and either is worlds better than dumping. But many researchers say that when possible, your best bet from an environmental perspective is to find outlets that will refurbish (if necessary) and then sell that used equipment. **■**

PROCESSOR®

Subscribe Today!

Call (800) 819-9014

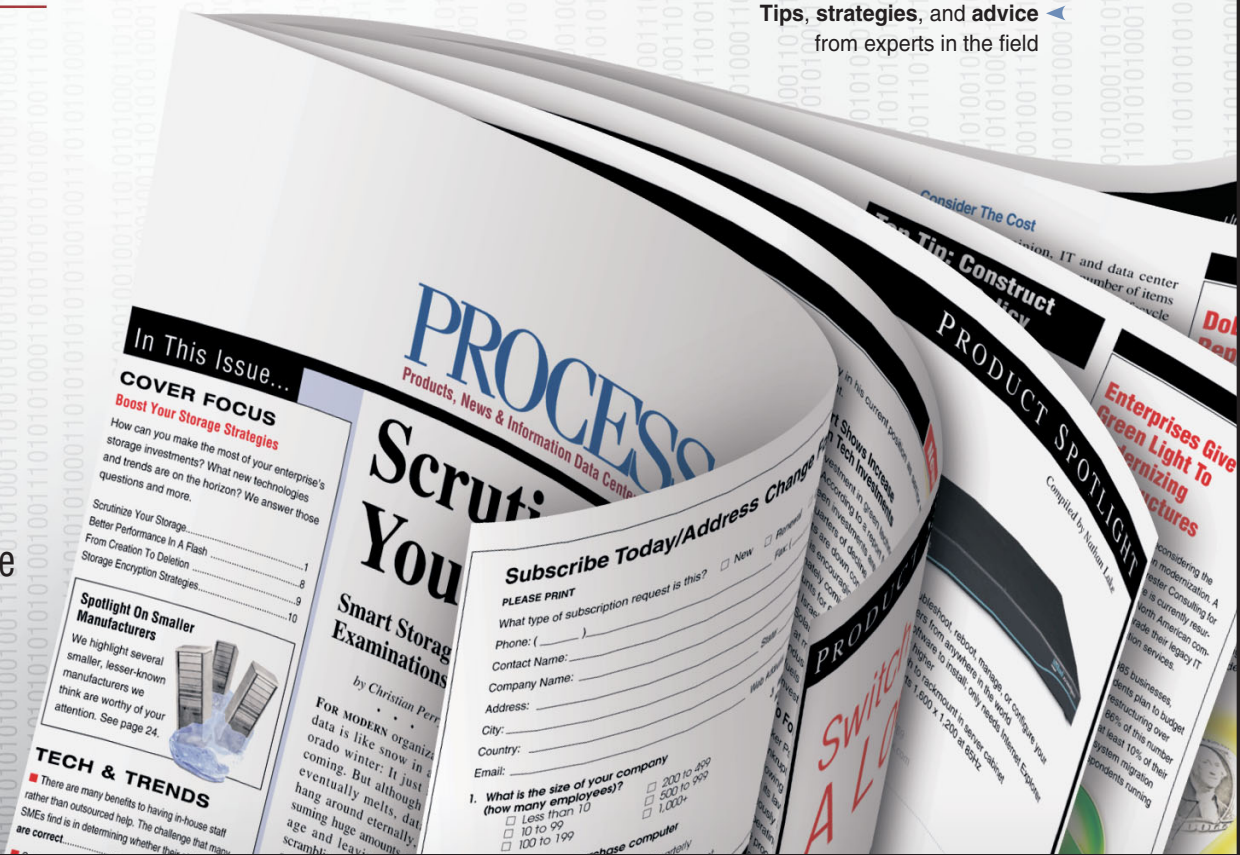
Subscribe Online!

Go to [www.processor.com](http://www.processor.com)

Data Center | Power | Cooling | Storage  
Wireless | IT | Networking | Racks  
Servers | Security | Flooring

Processor is the industry’s most comprehensive source for:

- Snapshots of new data center and IT hardware and software
- Rundowns of major industry news
- Information on manufacturers and resellers
- Tips, strategies, and advice from experts in the field









STORAGE



ESS Data Recovery  
www.datarecovery.com  
real labs, real people,  
REAL RECOVERY


DataRecovery.com (formerly ESS Data Recovery) was formed in 1996 as one of the first data recovery companies in the world. We have labs in Minnesota, Illinois, California, and Ontario, Canada, that service thousands of customers worldwide. We can work with almost any storage device, including large RAID arrays, data tapes, and any brand of hard drive.

**Services Offered:**

A complete line of data recovery services, including online backup, tape duplication, and secure data erasure.

(800) 237-4200 | www.datarecovery.com

STORAGE



SECURE  
MDE  
MOBILE DATA ELIMINATION


Secure MDE offers clients a mobile data elimination service, destroying hard drives and other media at customers' locations. The company's self-contained, high-capacity Secure Shark™ can be deployed at any facility across the country and is capable of shredding up to 1,000 hard drives an hour. Secure MDE is a subsidiary of Luminous Recycling, a leader in computer and electronics recycling. Luminous recycles 10 million pounds of electronic scrap annually.

**Services Offered:**

- High-capacity destruction of hard drives and other sensitive data

(888) 312-2333 | www.securemde.com

SERVERS



SUPERMICRO®


When buying a server, you don't want a one-size-fits-all solution. Supermicro uses modular and interoperable Server Building Blocks to offer the highest levels of flexibility and customization possible to design servers tailored and optimized for your specific needs. Supermicro's focus on green computing leadership, system design expertise, and power-saving technologies ensures the products you purchase are energy-efficient and application-optimized.

**Products Sold:**

- Servers
- Motherboards
- Chassis
- Networking
- Storage

(408) 503-8000 | www.supermicro.com

CLIENTS



dtSearch®  
www.dtsearch.com

Maryland-based dtSearch started research and development in text retrieval in 1988. The company is known for speedy adoption of new programming standards, OSes, and file types. Plus, it has a flexible licensing model. Typical corporate use of dtSearch includes general information retrieval, Internet and intranet site searching, and email archiving and email filtering.


**Products Sold:**

Text retrieval products, including:

- Desktop With Spider
- Network With Spider
- Publish For CD/DVDs
- Web With Spider
- Engine For Win & .NET
- Engine For Linux

(800) 483-4637 | www.dtsearch.com

CLIENTS



Giada  
Tech · Fashion · Art

Giada Technology is a San Francisco, Calif.,-based PC and hardware retailer that specializes in mini PCs, motherboards, netbooks, graphics cards, and other computer hardware and peripherals. Giada has additional offices in both Shenzhen and Hong Kong, China, and distributes its products through Amazon, Polywell, ASI, MA Labs, and Newegg.

**Products Sold:**

- Ultra mini PCs
- Motherboards
- Netbooks
- Graphics cards

(415) 202-5441 | www.giadapc.com

EQUIPMENT DEALER



Information  
Technology  
Trading


At Information Technology Trading, our goal is to help you acquire the right hardware or software solution. We specialize in purchasing and reselling data-processing equipment and have more than 21 years combined experience. We provide services and system upgrades, DASD, communication, and memory. We're also an outlet for off-lease portfolios.

**Products Sold:**

- AS400, Advanced System/36, R/S6000, ES/9000, and PC systems (including lease and rental)
- CPUs, memory, disks, tapes, displays, and controllers
- Services, including system design and installation, maintenance, and buyback of existing hardware

(877) 715-3686 | www.itechtrading.com

EQUIPMENT DEALER



PaceButler  
corporation


- PaceButler buys used cell phones.
- In business since 1987
- Redeploy your used phones after upgrade
- Donation option – directly to the non-profit of your choice
- Dedicated to customer satisfaction
  - A+ Rating with the Better Business Bureau
  - Payment issued in four days
- Dedicated to employee development
  - Book reading program
  - Health and fitness programs

**Products Sold:**

We buy used cell phones & PDAs, including Apple, LG, Blackberry, HTC, Motorola, Nextel, Nokia, PalmOne & Samsung.

(800) 248-5360 | www.pacebutler.com

EQUIPMENT DEALER



PCM

In 1987, Pegasus Computer Marketing started providing mainframe products to the end-user market. What began as a sales-only organization soon adapted to offer in-house repair and refurbishment. During the past 10 years, Pegasus has focused primarily on the point-of-sale and barcode industries, buying, selling, and providing service contracts for anywhere from a few scanners to hundreds.

**Products Sold:**

We buy, sell, and service:

- Point-Of-Sale Equipment and POS/PC Flat Panels
- Wired and Wireless Barcode Hardware
- Kronos Time Clocks and Accessories

(800) 856-2111 | www.pegasuscomputer.net

# We Know You're Busy

That's why we make sure each issue of *Processor* provides comprehensive information in a quick, easy-to-read format.

It's all available both in print and online at [www.processor.com](http://www.processor.com).

## PROCESSOR

Call (800) 819-9014 to subscribe to *Processor* or go to [www.processor.com](http://www.processor.com) to read articles and view thousands of products online free of charge to qualified readers.

# Processor is now on Facebook and Twitter!

Follow us at [www.twitter.com/ProcessorPub](http://www.twitter.com/ProcessorPub) or search for "Processor" on Facebook Groups

## PROCESSOR

Call (800) 819-9014 to subscribe to *Processor* or go to [www.processor.com](http://www.processor.com) to read articles and view thousands of products online free of charge to qualified readers.





# A New Frontier for EDA

## The landscape of the electronics industry is changing.

And it's all about the apps. Building complete systems that are application-ready is now as fundamental as delivering power-efficient silicon. There are a range of possibilities out there for EDA, but realizing them means going in a different direction.

Cadence focuses on application-driven approaches to designing, verifying, and implementing advanced chips, SoCs, and systems. And we build innovative capabilities for IP creation, selection, integration, and optimization. Along with our strong network of partners, we tackle what's now and survey what's next. And from our point of view, a revitalized industry is on the horizon.

Discover more at [www.cadence.com/newfrontier](http://www.cadence.com/newfrontier)